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## THE PHILOSOPHY OF ARBORICULTURE AND LANDSCAPE GARDENING.

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*(Concluded from page 661.)*

SUCH, then, are the principles, or rather, such is the principle of beauty, when regarded in the largest and most general point of view in the landscape, and in everything. It is unity in variety. And, with regard to the beauty of the theorems and intellectual objects generally, it is not possible to be more explicit. But with such objects we have nothing to do here. It will be satisfactory to you to know, however, that this principle of unity in variety covers all ideal compositions that are beautiful, and explain their beauty. The development of beauty is the felicitous treatment of some central unity, often for a time concealed and forgotten, but coming in at the close in the midst of a rich and abounding variety. To such a state of things a good novel, no less than a fine mathematical proposition, owes all its charms as a composition.

But it is with visible objects alone that we have here to do, and with regard to them it is possible to be more explicit. Thus, we can say that when unity in variety has been most completely established in any composition, then there is an exquisite symmetry in that composition. Thus, as the secret of the simplest kind of beauty,—that kind, namely, which bespeaks the repose of intelligence, while it flatters the eye and permits mental play upon it, but which does not tend to awake thought and feeling,—we have symmetry. And hence the universally acknowledged beauty of flowers and of well-designed geometrical gardens, which may be said to be imitations of flowers. They owe it all to the symmetry which they display. This kind of beauty may be called kaleidoscopic beauty.

But my readers will, I doubt not, have already detected a seeming fallacy into which I have fallen or rather, indeed, a piece of seeming self-contradiction. I set out with the theory that nature is the grand storehouse of beauty, and that the laws of nature are the principles of beauty, whereas I have now represented beauty as depending on the make of the mind of the beholder, his love of unity in variety, and consequently of symmetry. Now here there certainly seems to be a contradiction; but the contradiction is only seeming. Though mental action and intellect be not material nature, yet material nature is a creation of intellect; it reflects intellect, and the laws of material nature work towards unity in variety also just as intellect does. The laws of nature, consequently, work towards symmetry also. Nay, so true is this, that when they have established symmetry their work is done, and they are at rest. The proper expression of the beauty of symmetry, therefore, ought to be that of a balance of forces, or repose. The spectacle of a perfect symmetry ought, therefore, not to animate the beholder, but merely to please him, so as to induce him to prolong his gaze. Now, is not this precisely the state of mind which the beholding of a very symmetrical composition tends to induce?

The discussion of symmetry, therefore, cannot be the close of our theory of the Beautiful. No; if the work of the forces of nature were done, if all were symmetrical, all nature would be motionless, stereotype, dead. But this would never do for the busy mind. Plainly, the exhibition to the living mind of any extensive production of nature in which symmetry rules must be disappointing, deadening; for the living soul, active within herself, is ever seeking for the manifestation of life and action all around. And hence the great secret of the landscape-gardener. It is to maintain unity in variety strong, without allowing symmetry to show. In the very proportion in which he can succeed in awaking the idea of forces in which still acting and preventing the forms of nature from falling into a regular symmetry, towards which they tend, he succeeds in the creation of the *picturesque* and the

*sublime*,—that is, kinds of beauty expressive of animation—the former of not terrible, the latter of terrible powers.

On these principles of the beautiful, the picturesque, and the sublime, therefore, two points in the scientific practice of landscape gardening fully appear:—

1. Where the gardener is dealing with bright colours merely in the flower-garden, supposing it to be viewed from the mansion-house or elsewhere as a unity, he should place colours of the same tint in considerable breadths, so as to give a sufficient area of colour for the eye to rest upon. His colours should not be placed in juxtaposition in too harmonious tints, and he may adopt with advantage, provided there be ample nature around, the geometrical mode of gardening; for colour is not capable either of the picturesque or the sublime. No higher order of beauty than that which is merely kaleidoscopic is attainable by it.

2. In the landscape, the problem is to establish or preserve unity in its variety, so that the eye may not wander at large and go adrift in beholding it, and along with this to avoid all obvious symmetry as carefully as nature. Nature on the great scale, in the present epoch, everywhere displays departures from symmetry. Instead of a perfectly spherical globe, with a perfectly smooth surface and a circular orbit in the heavens, which is that to which the laws of nature would reduce our planet, if the action of these laws were completed, the surface of our globe is diversified by sea and land, mountain and valley, river and lake. It is expressive of great forces by no means composed into an eternal repose and sameness, but operating still with immense power and from different centres, and therefore in seeming (though in seeming only) conflict with each other. It is in small individualised objects alone—in crystals, plants, and animals—that the forces of nature are in any measure balanced, and that symmetry is developed. Hence, as has been said the picturesqueness and the sublimity nature; for these terms bespeak the consciousness of a force operating in nature, with which, though it be very different from our own, we may yet hold communion.

The landscape gardener, therefore, whilst he must not neglect a balance and even a repetition of parts in his landscape, must be on his guard against allowing any obvious symmetry to show itself. If he do, he will kill his composition. He will speak to the eye only, and not to the soul. And this state of things the architect also must observe, though within limits which are much narrower than those of the landscape gardener; for the mansion-house stands, as it were, midway between the flower-garden and the landscape. A large amount of obvious symmetry is almost indispensable in its construction. Symmetry bespeaks repose. It therefore fits the mansion for being a central resting-place for the eye.

But may we not reduce the practice of the beautiful in the landscape to principles still more specific? Artists are continually speaking of lines. They find that all the expressiveness, and much of the beauty of their creations, arise from the character of the lines and contours which they impart to these compositions. Now, this is only what is to be expected; for motion is the first sign of life, and a line is always a symbol of motion. The eye, in fact, just as it rests on an area, always runs along a line. Hence the importance of the lines which give the contour to the whole landscape, and of the forms of the individual objects which compose it, plainly appears. Does our theory, then, "that the laws of nature are the principles of beauty," throw any light on the relative value of different lines in imparting beauty? Yes, it gives specific diagrams. It defines those very lines on which, according to its own principles, all beauty must depend, in so far as that beauty depends upon the lines in the landscape or object, and not on colours and areas. It has been completely ascertained by natural philosophy, that material elements—elements possessing inertia, &c., and masses composed of such elements—when they move according to the laws of nature, and develope lines by their motion, constantly tend to move in one or other of that series of lines which is named the conic sections; and when natural motions leave lines behind them, these lines are traces, more or less extended of the conic sections. These are the circular line, the elliptic line (to which we may add the spiral as a resultant form, when the line changes its plane), the parabolic line, the hyperbolic line, and the asymptote or straight line. They have now been named in the order in which the physical forces, in producing them, grow more and more unbalanced or intense, and consequently, in the order in which they grow more and more expressive. The circular line and the elliptic both return into themselves. They are both finite like our minds, and therefore commensurate with ourselves; and, accordingly, such is the expression which they impart to objects in which they appear. The circle, indeed, is not usually included among the conic sections, and it need hardly be included among expressive lines. The circle is too symmetrical. But it is far otherwise with the elliptic line. Wherever it appears it renders the object which displays it "graceful" and very pleasing to the beholder, when he does not desire to be thrown into emotion. The other lines, again, do not return into themselves. They are infinite. They bespeak active force still actuating them, and their expression is more grand and severe. They are the parabola, the hyperbola and the straight line.

But, with regard to all those lines, it must be here remarked that in nature a part of each is usually combined with another part, according to the law of symmetry; that is, placed in an inverse position, both parts together, thus giving a waving line. And of this line the value, as an element of beauty has long since been formally recognised, and known by the name of Hogarth's line of beauty.

And now it would form a most pleasing theme to dilate upon each of these lines in detail, and to show how exactly they maintain, in imparting beauty and expressiveness to nature, the function which has been assigned to them. But this would imply a considerable lengthening of a communication which is long enough already. Let us merely glance at them in reference to that which is simpler than the landscape, I mean the Ocean.

Say, then, that we are gazing upon the ocean first when it is perfectly calm and splendent with silvery radiance in the beams of the morning sun; there is nothing here for the eye to rest upon but a boundless plane glassy surface, and the perfectly straight but equally boundless horizon line. The straight line, in a word, rules the scene. The expression of the calm ocean, therefore, according to our theory, ought to be sublime. It ought to awake in the soul of the beholder the pleasing but awe-inspiring emotion of the infinite. Now, it will not be denied that this is precisely the expression of the ocean when contemplated in a state of repose.

Say, now, that in some distant region a storm is raging, but is indicated in the place where the beholder stands only by what is so well known as a "ground swell." This is a mode of action which does not ruffle the surface of the sea, but which, instead of leaving the glassy surface straight and level as well as glassy, has heaved it into a state of undulation with long circular arches or waves, and wide circular hollows or troughs between. Here, then, we have a change from the straight line to the circular line, from the infinite line to that which is the most finite of all lines. The change, therefore, ought, according to our theory, to be most unfavourable to the development of pleasing emotion in contemplating the ocean. And is not this eminently the fact? Was there ever a spectator yet who admired a ground swell, compared with any other state of the ocean?

But let the waves be now raised, so that their summits bespeak a smaller radius than their bases,—let them, in a word, assume a parabolic form, and what, let us ask, is the effect? Every one feels that more life has been infused into the scene.

And now, let the summit of the wave become still more acute, until at last it turns over and falls down on its own base as a breaker, and has

not the expression become intense? In a word in proportion as the circular and the symmetrical disappear, and lines of the infinite order present themselves, the sea becomes more expressive, more animated, and more animating.

The very same phenomena may be observed in reference to the landscape. How awful is a boundless plain or tableland, giving on all sides a horizon line as straight as that of the ocean!

The art of the printer has seldom succeeded in awaking a more powerful emotion than when such a desert has been drawn with an eagle or camel, or some sentient creature, in the foreground.

How uninteresting, on the other had, is a country whose surface is everywhere equally undulated with round-backed rising grounds, and corresponding low grounds between! Nay, though the undulations rise to the magnitude of mountains and valleys, still, if their contour is composed of circular arches, expression is found to be very tame. But when the parabolic line begins to show itself, now in its vertex, on the somewhat conical hilltop, now in its long arms, changing insensibly into the straight line down the valley and into the plain; and when mountains and valleys of this character are so composed that a unity reigns amid all the variety, the effect is charming. It needs only the vertical straight line of the precipice here and there, and the horizontal line of the lake or sea, to make it sublime.

But yet, how wanting as a masterpiece of nature is any and every landscape if arboriculture has not been there,—either that of Nature, the great arboriculturist, or that of man, her intelligent imitator and friend.

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## VITALITY OF SEEDS.

The duration of the vitality of seeds is perhaps the most important of the various phenomena of plant-life, especially when considered in connection with the introduction into a country of the economic plants of other countries. It is a subject that has engaged attention from very early times, and the literature relating thereto is considerable. Much of this, however, is of a traditional and unpractical character; but even if we confine ourselves to the demonstrable, or demonstrated, the subject is almost inexhaustible. There is such an infinity of variety in the behaviour of seeds under different conditions, that it is impossible in a short account, such as this must be, to do more than convey a general idea of the subject. Perhaps the best way to treat the question, apart from technicalities, is to consider the vitality of seeds under ordinary, and under extraordinary, conditions. In the development and germination of seeds, there is, in a sense, usually a period of gestation and a period of incubation, as in oviparous organisms of the animal kingdom; and the duration of these periods is within definable limits, under ordinary conditions though seeds do not exhibit the same fixity of time in regard to development and vitality as eggs. The embryo of a seed is the result of the impregnation of the female ovum in the ovary or young seed-vessel, by the male element, generated in the anthers; and in the mature state this embryo may fill the whole space within the skin, or testa, of the seed, as in the bean and acorn; or it may be a comparatively minute body, as in wheat, maize, and other cereals; the rest of the seed being filled with matter not incorporated in the embryo The difference is one of degree in development. In the one case, the growing embryo has absorbed into its own system, as it were, before germination or the beginning of the growth of the embryo into a new plant, the whole of the nutrient material provided in the seed for reproduction; whereas, in the latter case, the process of absorption and utilisation of the "albumen," or nutrient matter, takes place after the seed is detached from the parent plant, and during the earliest stage of growth of the new plant; so that the plant is nourished until it has formed organs capable of assimilating the food obtainable from the atmosphere and earth. Between these two extremes of development of the embryo, or future plant, before organic connection with the parent ceases, there is every conceivable degree and variety; and, as will presently be explained with examples, some plants are viviparous, in the sense that the embryo commences active life before being severed from the parent, so that when this occurs the plant is in a position to draw its sustenance from unassimilated or inorganic materials. Now it is a curious and unexplainable fact that certain seeds exhibiting extremes of embryonal development, instanced in the bean and wheat, are equally retentive of their germinative power. The longevity, if it may be so called, of seeds is exemplified in "exalbuminous" seeds as well as in "albuminous" seeds of every degree. It should be mentioned, however, that the difference is not so much one of assimilation or development as of the earlier or later transfer of the nutrient matter of

the seed to the embryo or plantlet. Assuming the perfect maturation of a seed, certain conditions are necessary to quicken its dormant vitality; and the two principal factors are heat and moisture, varying enormously in amount for different plants, and acting much more rapidly on some seeds than on others, even when the amount required is much the same. Neither under natural nor under artificial conditions will some seeds retain their vitality more than one season; and all the resources of the accumulated experience of seed-importers from distant countries are insufficient in some cases to maintain their vitality. It is not altogether because the interval between the dispersal and the germination of the seed, under ordinary conditions, is necessarily longer; but rather because in the one case the conditions under which a seed will germinate are much more restricted than in the other. Let us now examine the natural conditions under which seeds are commonly produced and dispersed, in relation to the retention of their vitality; and we shall learn how much more it depends on their nature, or natural means of protection, than on the seasons. An oak tree sheds its acorns in autumn, and the leaves which fall afterwards afford them some protection from frost and excessive dryness. But the leaves might be blown away from one spot, and the acorns exposed to intense frost or drought, either of which will speedily kill them. In another spot the leaves may drift into thick layers, with an excessive accumulation of moisture, causing decay of the underlying acorns; and there are many other unfavourable conditions which may destroy the vitality of the acorn. It is apparently impossible, however, to preserve an acorn's vitality by any artificial means for more than one season.

The scarlet-runner bean loses its germinative power on exposure to comparatively slight frost, the degree depending upon the amount of moisture in it; yet it will retain its vitality for an almost indefinite period under favourable artificial conditions. In both of the examples given, germination would naturally follow as soon after maturation as the conditions allowed. The seeds of the hawthorn behave differently. Each haw contains normally three to five seeds, every one of which is encased in a hard, bony envelope, in addition to its proper coat or testa. Committed to the earth, and under the most favourable conditions, these seed do not germinate till the second year, and often not so soon. In this instance prolongation of vitality is probably due in some measure to the protective nature of the shell enclosing the seed.

Returning to seeds in which the embryo or plantlet forms only a very small part of the whole body, wheat may be taken as a familiar and easily observed illustration of a seed, the vital energy of which requires very little to stimulate it into active growth; and yet this same seed, having no special protection in the way of coating, will retain its vitality as long, perhaps, as any kind of seed, if not under the influence of moisture. The primary condition to the preservation of vitality in a seed is perfect ripeness. Unripe seeds of many kinds will germinate and grow into independent plants if sown immediately after removal from the parent. The facility with which immature wheat will germinate is most disastrously exemplified in a wet harvest, when the seeds will sprout while the corn is standing or in sheaf; thus destroying more or less completely the value of the grain for flour, as the starch or flour is consumed in the development of the embryo, or what is left is so deteriorated by chemical change that it is not good for food. There is perhaps no other seed more susceptible to moisture, and none less affected by dryness, or by heat or cold in the absence of moisture.

The kind of vivipary exhibited by the wheat is occasionally observed in various other plants; and sometimes the seeds of pulpy fruits germinate in the fruit. There is also a class of plants in which vivipary is normal. Prominent in this class are the mangroves (*Rhizophoreæ*, &c.) of muddy sea-shores in the tropics. In these plants there is a remarkable adaptation to conditions, which ensures their reproduction. From the very inception of the embryo there is no apparent interruption of active vitality in its development and germination. In the earliest stage the cotyledons or seed-leaves are formed, and the radicle or future primary root is represented by a very small point. When the former have attained their full development, which is not great, the latter begins to grow and rapidly increases in size. Each fruit or seed-vessel, it should be mentioned, contains only one seed, the rootlet of which points to the apex of the fruit. Soon this rootlet pushes its way through the apex of the fruit, and grows into a spindle-shaped body of great density and length; the cotyledons or seed-leaves remaining partly inside the fruit, and acting as an organ of absorption from the parent plant to nourish the seedling. In *Rhizophora mucronata* this radicle attains a length of two or three feet, and the seedling eventually falls, and by its own weight penetrates and sticks in the mud, leaving the fruit, containing the exhausted cotyledons, attached to the tree, where it dries up. Another singular adaptation to conditions is the vital development of the seeds of aquatic plants which ripen their seeds on or under water. *Vallisneria* is a remarkable instance of this. The unisexual flowers are formed under water; the female on long coiled stalks, which at the right period uncoil, and the flower rises just above the surface of the water. Simultaneously the short-stalked male flowers are detached from the base of the leaf-stalks, and also rise to the surface. After impregnation has taken place, the stalk of the female flower coils up again, and draws the seed-vessel down under water, where the seeds ripen.

It has been explained that heat, moisture, and air are necessary to the germination of seeds, varying immensely for different seeds. We come now to the behaviour of certain seeds under the influence of an unusual or unnatural amount of moisture, heat or cold especially in relation to the length of the duration of the exposure to any one of these factors. It has been proved beyond dispute, by actual experiment, that the vitality of certain seeds, notably various kinds of bean and convolvulus, is not impaired by immersion in sea-water—or rather floating and partially submerged—for a period of at least one year; and that after having been kept quite dry for two or three years. Plants are actually growing at Kew from seeds treated as described; and some years ago several seeds of *Entada*, cast ashore in the Azores, whither they had been transported by the Gulf Stream, were raised at Kew. So far as at present known, all the seeds that will bear very long immersion without injury have an intensely hard, bony, or crustaceous coat, that would withstand boiling for a minute or two without killing the embryo. Yet it is difficult to understand this power of resistance, especially after being kept dry for a long time. This imperviousness to water explains the wide distribution of many sea-side plants, the seeds of which are conveyed by oceanic currents. How long such seeds would retain their vitality in water is uncertain, because experiments have not reached the limit. Many readers will remember Darwin's experiments in this connection; but it should be borne in mind that they were chiefly with seeds of plants not at all likely to be dispersed by the sea.

It has already been stated that some seeds will bear immersion in boiling water for a short time, and gardeners occasionally practise this treatment to accelerate the germination of hard-coated seeds. But seeds of all kinds will bear for a considerably longer period a much higher dry temperature than soaking in water of the same temperature. It is recorded, by trustworthy authorities, that the seeds of many plants—poppy, parsley, sunflower, and various kinds of grain, for instance—if perfectly dry, do not lose their vitality when subjected to a temperature of 212° F. for forty-eight hours; and for shorter periods to a much greater heat. The result in most cases, though not all, is a considerable retardation of germination. Dry grain is equally impervious to cold. In 1877, seedling wheat was exhibited at the Linnean Society that had been raised at Kew from grain that had been exposed

to the intense cold of the Arctic expedition of 1874 to 1876. The next question that arises is: how long of seeds retain their vitality when stored in the ordinary ways adopted by dealers? As a rule, seedsmen and gardeners prefer new seed, because a larger percentage germinates; and mixing cold seeds with new, tells its own tale in irregular germination. Nevertheless, there are many seeds that retain their vitality from five to ten years sufficiently well to be depended upon to yield a good crop. Old balsam seed, other things being equal, has the reputation of yielding a larger proportion of double flowers than new; and some gardeners consider that cucumber seed of four or five years of age gives better results than the seed of the previous year. As already mentioned, perfectly ripened seed will retain its vitality longer than imperfectly ripened seed. In illustration of this, we note that carrot seed grown in France retains its germinative power, on the average, longer than English-grown seed, owing to climatal differences.

There is one other natural condition in relation to the vitality of seeds that should be mentioned; that is, the duration of the vitality of seeds on the mother plant. Some of the Australian *Proteaceæ*, and some of the fir trees, especially North American, bear the seed-vessels containing quick seeds of many successive seasons; and only under the influence of excessive drought or forest fires do they open and release the seed. Rapid forest fires are often not sufficient to consume the cones, but sufficient to cause them to open and free the seed for a succession of trees. The unopened cones of thirty years have been counted on some fir trees; and it is averred that the first seed-vessels of some proteaceous trees do not open to shed their seed, under ordinary conditions, until the death of the parent plant, so that a tree may bear the accumulated seed of half a century or more.

Finally, a few words respecting the extreme longevity attributed to certain seeds. The reputed germination of "mummy wheat," from two to three thousand years old, has been the theme of much writing; but the results of careful subsequent experiments with grain taken from various tombs do not support the doubtless equally conscientious, though less skilfully conducted, experiments, supposed by some persons to have established the fact of wheat of so great an age having germinated. Indeed it is now known that the experiments mainly relied upon to prove this long retention of vitality were falsified by the gardener who had charge of them. Nevertheless, there is no doubt that some seeds do retain their vitality for a very long period, as is proved by numerous well-authenticated instances. Almost every writer on physiological botany cites a number of instances. Kidney beans taken from the herbarium of Tournefort are said to have germinated after having been thus preserved for at least 100 years. Wheat and rye are also credited with having retained their vitality for as long a period. Seeds of the sensitive plant (*Mimosa pudica*) kept in an ordinary bag at the Jardin des Plantes, Paris, germinated freely when sixty years old. A long list might be made of seeds that have germinated after being stored for twenty-five to thirty years. If seeds retain their vitality for so long a period as this under such conditions, it is quite conceivable that seeds buried deep in the earth, beyond atmospheric influences, and where there was not excessive moisture, might retain their germinative power for an almost indefinite period; and the fact that plants previously unknown in a locality often spring up where excavations have been made, bear out this assumption. The same thing happens in arable land, should the farmer plough deeper than usual; and deeper tillage, which would otherwise be beneficial is often avoided on this account. A careful writer like Lindley states, though without qualification, that he had raspberry plants raised from seed taken from the stomach of a man, whose skeleton was found thirty feet below the surface of the ground. Judging from coins found at the same place, the seeds were probably 1600 or 1700 years old. One more example of seeds germinatng that are supposed to have been buried some 1500 to 2000 years. About twenty years ago, on the removal of a quantity of slack of the ancient silver mines of Greece, several plants sprang up in abundance previously unknown in the locality. Among these was a species of *Glaucium*, which was even described as new; and it is suggested that the seed may have lain dormant for the long period indicated. But there is not the amount of certainty about any of these assumed very old seeds to convince the sceptical or to establish a fact. It remains yet for somebody to institute and carry out careful investigations where excavations are being made.

W. Botting Hemsley.

—*Nature.*

## WILL THERE BE A RUBBER FAMINE?

We are surprised to see in the London *India-Rubber Journal* a prediction of a rubber famine, written in a style suggestive of those newspapper articles which tell us from time to time how rubber is gathered in hollow pumpkins, or that "para" is not rubber until it has been vulcanized. Fifty years ago it was well enough to talk about the known supplies of rubber becoming exhausted, and it was the work of an intelligent man for John Forbses Royle, for instance, to urge that new sources of this valuabe material be looked for. But in Roylei's time no rubber had been marketed from India, its presence in Bolivia and in Africa was unknown, and the extent of the Amazonian forests unsuspected. The situation is far different now, since Stanley's great work in revealing the resources of the Congo basin and Emin Pasha's discovery of rubber in the Soudan, and since the French have come into a position to develop Madagascar on a broader scale. We feel safe in asserting that the *India-Rubber Journal* does not know of any country, important at any time as a producer of rubber, which is not still exporting it. Has it seen any evidence that Para rubber is growing scarcer, or that the African grades are becoming harder to obtain? Can it show that, on the whole, there are fewer rubber-trees available than time in the past?

The reasons which our contemporary gives for its alarm are (1) the rapid growth of the bicycle industry; (2) the probability of rubber tires being largely used for carriages; and (3) the recklessness of "the owners of plantations in west Africa and elsewhere" in their "method of tapping the *trees*." We can say that, as for the United States, the largest estimate of the consumption of rubber by the bicycle trade does not exceed five per. cent of our total imports, while the carriage-tire demand does not promise soon to equal in value even the rubber-stamp trade. In a country where the importation of rubber has bounded upward at rate of millions of pounds annually, none of these items is of comanding importance, and importers believe that all the rubber actually demanded by manufacturers will long be forthcoming. There is no more fear on this side of the Atlantic that rubber will become exhausted than that coal or wheat will. And we presume that our rubber-merchants have studied the situation as carefully as those of any other country.

All the rubber-vines that have ever been killed in Africa are as a drop in the sea compared with what still remain there, and we cannot learn that the rubber-gatherers on the Amazon are so dfferent from the rest of mankind as to be unable to see that, if they kill their trees, their occupation will be gone. It is a half-century since the expression "killing the goose that lays the golden eggs" was first applied to the rubber industry, and it is time that some new stock phrases were introduced into the work hack-writers on this subject,

The most surprising thing of all is that the *Journal* should see in the development of the balata crop a remedy for the threatened famine. It hears that in the handful of forests in the Guianas there is enough gum—only slightly inferior to caoutchouc to support a trade for centuries. Evidently our contemporary has only just got hold of the remarkable prospectus issued a year or so ago by an enthusiastic French gentleman, who figured out that the penal colony of Cayenne could gather in the balata

forests there ten times as much rubber every year as the whole world now requires. It would be a strange thing, indeed, if the narrow strip of land embraced in the Guianas should become of greater value as source of rubber than the valleys fringing the 50,000 miles of waterways in the Amazon system and an equal area of rubber forests in Africa.

If such a thing were really possible as the exhaustion of the natural rubber supply in the next century, there is ample reason for believing (1) that rubber-trees will grow as well from seeds planted by hand as from seeds scattered by the winds; (2) that rubber cultivation is practable wherever the trees now grow native; and (3) that the rubber zone embraces millions square miles. The cultivation of rubber—when the time comes—is as practicable as that of oranges, olives, tea, coffee, cloves, or cinchona. We hope, therefore, that further predictions of a rubber famine will be left for those who think that the planting of old shoes is the surest way of starting a rubber plantation.—*Indiarubber World*

## RUBBER CULTURE IN FLORIDA.

A writer in the New Orleans *Times-Democrat* revives the idea of planting rubber trees in Florida, and states that it is moist and hot enough there to raise rubber of an excellent quality. It seems that one generation speedily forgets the experience of a preceding one. About forty years ago the United States Goverument planted rubber trees in Florida, and they may be there yet. Some were cared for also at the Centennial Exposition, and some are found in botanical gardens elsewhere. The trouble is they don't produce rubber. Florida is outside of the Tropics; Pará is on the Equator. It rains every day at Pará or else there is fear of a drought; Florida gets its quota of rain a good deal in the winter and not so much in the summer. Rain, continual hot weather, monkeys, and rubber go together; and rubber is the first to drop out of the combination. The New Orleans writer states that Da Silva planted 20,000 rubber trees near Pará, on Bom Intento, in 1865, at a cost of 3,200, dollars. Of these, only 1,000 remain; the Amazon which revels in nature and cares little for art, washed 19,000 away in one of its annual "tears." These trees yield a small profit now; but the practical mind asks, what is the use of spending 3,200 dollars, which in twenty-five years amount, with compound interest, to 50,000 dollars, to obtain something that is so free that what would be called good-sized countries in Europe are lying idle in a virgin forest that will not be reached before the shoddy man has found a way to pay a little something to the importer to go out of the business altogether?—*Indiarubber World*.

## TOBACCO CULTURE IN THE EAST.

Mr. C. Tripp read a paper at the Imperial Institute, on "The Tobacco Industry of India and the Far East," the meeting (over which Lord Harris presided, in the absence of Lord Lorne, M.P., who is on the Continent) being held in connection with the Indian Section of the Society of Arts.

Mr. Tripp's experience has been derived in Sumatra, and be spoke in high terms of the suitability of its climate and soil for the cultivation of the tobacco plant But there is a third factor of great importance—labour. For the higher or skilled labour a European is apparently needed, and he must be a man of strong common-sense and posses qualities—so the lecturer hinted—other than those that go to make a brilliant statesman or journalist. For the manual and mechanical work the Chinese are found best qualified. Javanese labour is cheaper, but practically of no use at all. Europeans, by adopting scientific methods, have converted a trade which, thirty years ago, was measured by a few hundreds sterling, into one calculated by millions: yet the natives, blind to facts, deaf to advice, and doggedly conservative, go on growing tobacco in their own way, insisting that they are right and that the white man is wrong. This consideration was vital to the main argument of the paper, for Mr. Tripp is anxious that the quality of Indian tobacco should be improved. He cannot bring himself to believe that the soil of India can "aspire to the perfection of Sumatra," but the climate is all that can be desired. Therefore, why does India produce that "coarse, thick-ribbed pungent tobacco" that is "quite unsaleable in Europe?" Mr. Tripp suspects that inferior culture has a great deal to do with it. Nay, he went so far yesterday afternoon as to indicate where the Indian growers and curers are at fault. The plants are "topped" too soon, the newly-reaped tobacco is exposed too long to sun and light, and the fermentation is not properly understood. There are also, he thinks, important undeveloped possibilities in connection with Borneo, though, it should be pointed out, his modest estimate of results already produced there was taken exception to, in the subsequent discussion, by Mr. Strutt, M.P. Mr. Tripp concluded his paper by indicating the new field for English labour that would be opened up by the development of tobacco cultivation in the directions he had indicated. He looks forward to the time when the British smoker will consume cigars produced from British soil, with British capital, and made by British hands. For why do we import 80,000,000 cigars from the Continent every year? Mr, Tripp answers that question in one word—prejudice.—*Overland Mail.*

## PLANTS FOR GREEN MANURING.

With a view to determining the amount of nitrogen by which various leguminous plants enrich the soil, some interesting and valuable experiments were made last year on the experimental fields at Hohenheim, Wurtemburg. The soil was a heavy loam, on which rye and winter peas had been grown in the third year previous, rape manured with superphosphate and nitrate of soda in the second year previous, and winter barley in the previous year. After the barley was harvested, 17 different kinds of leguminous and other plants were sown for green-manuring on 17 plots, each containing about 50 square yards separated by uncultivated strips. In September following the crop on each plot was dug under, and Sheriff wheat drilled on all the plots. The yield of wheat where different leguminous plants had been used as green manures (lupines, clovers, field beans, peas, vetch, and serradella), ranged from 15 lb. to 22 lb. averaging about 20 lb. It was lowest with serradella and highest with red clover and white and yellow lupine Second to the latter were field peas and beans and scarlet clover. The yield with kohl was 16 lb., with white mustard 15½ lb., and with three varieties of buckwheat the average yield was 13 lb. per plot. It was noticed that on the plots, especially those with lupines, many heads of grain were backward in ripening. On examination the roots of such plants were found to be covered with a white fungus. No such fungus was found on the roots where non-leguminous plants were used for green manure. In how far this occurred was due to the green-manuring with leguminous plants was not determined. In another series of experiments, the object was to compare the total amounts of nitrogen contained in crops of different leguminous plants, and in the leaves, stems, and roots of the same separately. The soil on which this trial was made had been in grain for three years previous. Whether or not it was manured in any way for the present crop is not stated in the abstract. The seed was broadcasted on the different plots. It was found that the large field beans gave the largest yield of nitrogen per square yard of land; but considering the cost of seeding this crop, it is believed that, from a financial point of view, it does not exceed the lupines in value. The difference in the nitrogen in the white and blue lupines raised from native and from foreign seed is very marked, the foreign seed yielding over a third more. It is seen that an acre crop of large field beans is able to take from the air and so give to the soil more than 225 lb. of nitrogen, while the same crop of lupines yields some 165 lb. To supply these amounts of nitrogen in the form of nitrate of soda, would require from a 1,000 lb. to 1,500 lb. of that material.—*Agricultural Journal*, Cape Colony.

## "A NATURAL HISTORY OF ALL THE SCALE INSECTS OF CEYLON."

Such is the proper designation of the important work on which Mr. E. Ernest Green of Pundaluoya is at present engaged in the old country, and I must again press on his brother planters, the Planters' Association and the Ceylon Government the great call there is for extending support to the author in his most useful enterprise. In my opinion no work of more practical value to our planters of all grades and products has been heard of since "Nietner's Enemies of the Coffee Tree." But, unfortunately, Mr. Green has done himself far less than justice—at any rate in the estimation of practical, non-scientific plant'ng and business men—by his very scientific, not to say non-popular, dry-as-dust Prospectus. I have pointed this out to Mr. Green and remarked that it is not likely Tea Plantation Companies or other large proprietors in Ceylon even—much less in other lands—will be attracted by a "Descriptive Catalogue of the Coccidae of Ceylon" even though backed by a long array of scientific men. I have urged Mr. Green to draw up a fly-leaf prospectus making plain to planters what his work will really do for them and I am glad to say that he is likely to comply with my suggestion. What this will mean may be understood from the following extract from my latest letter from Mr. Green:—

"My prospectus—as you point out—does not perhaps describe my work to the best advantage. It was drawn up rather hurriedly, and I was advised by the publishers to make it as brief as possible. Although my book is there described as 'a Descriptive Catalogue,' it will really be—as far as possible—a natural history of all the Scale Insects of Ceylon, with full illustrations of every species which should enable anyone to recognise—almost at a glance—their particular enemy.

"As I mentioned in my letter of 2nd January (which must have reached Colombo after your departure), although my work is primarily a natural history of these insect pests, I shall add a general review of all the remedies and experiments that have been used against them, pointing out the particular treatment most suitable for particular species as suggested by their habits. There is scarcely a plant or tree of any kind in Ceylon that is not subject to one or more species of these 'scale-bugs,' and some change in the conditions of their life, such as the partial extermination of their natural enemies, may at any time cause any of them to suddenly spring into importance."

In view of the above, and of the further facts which Mr. Green will no doubt bring out in his supplementary prospectus, I have no doubt that though the cost of the work is considerable (some R85 in Ceylon) that a great many of the Tea Companies and other large Plantation Companies will act on the suggestion about making a copy available in the hands of each of their Chief Managers for reference by their Superintendents. At the same time the Planters' Association and the Ceylon Government should take notice of Mr. Green's work and the latter should either subsidize, or offer to take a considerable number of copies for their Kachcheries, Forest and Botanical Departments as well as to present to other Colonial Governments. J.F.

*P.S.*—Since the above was written, Mr. Green has requested that subscribers' names to his new work should be registered at the *Observer* Office—a request we have much pleasure in complying with; but we feel sure the Planters' Committee and the other bodies and public men will do what they can to give the enterprising author all due support.

## IN THE METROPOLIS.

London, March 13.

DR. MORRIS

was as interesting and instructive in conversation as usual. His latest trip to the West Indies, and especially the Bahamas afforded interesting topics: though great success has not attended the efforts of Ceylon planters who have gone Westwards—Messrs. W. Sabonadière, Marshall, Burnett and others—yet there is no doubt of a revival of prosperity in many of the islands and this is due to their taking advantage of the grand and ever-growing market at their door, almost for nearly all the produce they produce, namely the United States. Frost is considered to have wrenched the golden prospects of much of Florida and California and so the West Indies have the ball at their foot in supplying fruit, and tropical produce generally, to North America. I will say nothing about the Bahamas and its Sisal industry until I hear (as I hope to do) Dr. Morris's lecture on the subject before the Society of Arts on Wednesday next. The efforts of Dr. Morris, when Director of Gardens, backed up by his Assistants, Messrs. Neck and Hart, did much for Jamaica and it is now rapidly going ahead. One want in the West seems to be an independent enterprising Press; but it is difficult for the separate island communities to pull together and there is no common metropolitan centre which for a paper would ensure general support. The *Tropical Agriculturist* continues to be well supported and much appreciated in the West. Dominica may now be expected to come to the front, though an unkindly critic seems to have anticipated the advent of the Ceylon administrator by saying that he was a better judge of the good things of the table than of a Colony's public requirements! That is not fair; for put on his mettle in a responsible charge, Mr. P. A. Templer will, I have no doubt, give scope to his admitted ability.

The interest of the gathering in the Whitehall Rooms was enhanced by ladies being now admitted to the Dinner as well as the meeting: Sir G. Baden-Powell, Sir Francis Scott (just returned from Ashanti) and others were thus accompanied by their better-halves. The lecture, as I have said, was discursive and dealt chiefly with West Africa, about which most of the speakers—including Mr. Alfred Jones of Liverpool, the king of commerce in that part, Mr. Hodgson, Colonial Secretary, Sir Quayle-Jones, Chief Justice, and the Governor of St. Helena, besides Sir Francis Scott, and Sir F. de Winton. The last mentioned indeed, in dwelling on the absolute necessity of roads and railways, referred to South Africa. Dr. Morris made the most useful contribution to the discussion in describing what "Botanic Stations" had done and were doing for the West African Settlements. He praised Governor Mollony for being the first to develop the rubber trade from the Gold Coast, now worth a great deal per annum, and when he was transferred along the Coast, that Governor got trained men from the Gardens to search the natural forests, who, instead of a rubber vine (*Landolphia*) which got killed in collecting the rubber, found a vigorous rubber forest tree which merely required scoring and would be ready for further harvests in a certain number of years. This was in Lagos. Dr. Morris dwelt on the fact that the exports were chiefly natural forest products; but coffee and cacao could well be cultivated. He mentioned how in New York a monopolist of mahogany got from Africa via Liverpool, called it "vermilion"—origin unknown—to deceive rivals in

the trade. The African mahogany trade is rapidly growing and somewhat injuring that of Honduras.

SIR ROBERT HERBERT

(who made a most admirable Chairman) after Dr. Morris sat down, unexpectedly called on me to speak, saying:—"We have Mr. John Ferguson of Ceylon with us this evening and as he has paid much attention to tropical agriculture, perhaps he may have something to say on the subject of the paper."

My few remarks were as follows:—Sir Robert Herbert, ladies and gentlemen,— I venture to intrude solely with reference to one passage in the interesting lecture to which we have listened. It is where Sir Geo. Baden Powell says:—

"I may here add that tropical Africa also offers a great arena for the work of many of our Indian fellow-subjects, traders, artisans, soldiers and planters. Our rule in India tends to a great redundancy of population, and in Africa this surplus will find a useful and profitable field."

Some two years ago, I was applied to by a prosperous Ceylon coffee and tea planter for advice: he had £5,000 of capital ready for investment outside his plantations and he wished to know should he take up land for coffee in Java or in British Central Africa. I advised a visit to the Shiré Highlands. The country was inspected with such satisfactory result that my friend took up a large block, came back and was induced to form a "Nyassaland Coffee Co., Ld.," which was supported by shrewd business and planting men in Ceylon, who have sent over practical superintendents to open a coffee plantation. This, so far as I know, is the finest plantation company in that part of Africa and it owes its initiation to, and has its headquarters not in London but in, Ceylon—so establishing a bond of union between our leading Asiatic Colony and Central Africa. Ceylon long before this had given Sir Henry Johnston his first working Horticulturist and Botanist, surveyors and some planters. The pioneer of coffee was Mr. Buchanan, a Mission Agent; but he was now followed by Ceylon men, and if the present new administration is continued, roads opened and railways encouraged, we may look for the speedy development of British Central and East Africa—and more particularly of Nyassaland. There is a growing demand for Coffee both in America and Europe though not in the United Kingdom, and no present fear of over-production, and Africa is the indigenous home of Coffee. Referring to the latest news from Nyassaland, I mentioned how the Manager of the Company had reported coffee plantations paying 20 per cent return in their 4th year; and in contrast with Sierra Leone where the Chief Justice had said native labour had risen to 1s per day, I quoted Mr. G. M. Crabbe as naming the equivalent in calico of 2*s a month* for men, 1*s* 6*d* women and 1*s* for children as the wages paid! This constituted a perfect paradise for cheap labour, even when compared with the 12 million of people in Southern India who were content if they earned 2*s* 6*d* a week for family of five.

The Governor of St. Helena (the smallest but not least interesting British Dependency) wound up the discussion.

Next day I met by his appointment, Mr. H. T. Hartley, one of the Directors of the

"INDIAN AND CEYLON EXHIBITION OF 1896."

who was accompanied by Mr. Wickremasinghe of the British Museum. No one can come into contact with Mr. Hartley without forming a high opinion of his business capacity and sterling good sense; and I was disappointed to learn that the Ceylon Government before the advent of your new Governor had decided adversely on the point of making a Loan Collection illustrative of Native Industries and of lending any buildings available from Chicago, the Tea Kiosk for instance. As the Company are ready to bear the expense of transport, &c., I trust H.E. Governor Ridgeway will reconsider this decision in a sense favourable to the Exhibition and what I believe to be the best interests, of the Colony. There can be no doubt of the grand advertisement for Ceylon, her products and industries which the Exhibition will afford, and I trust, therefore, that the Planters' Association or Thirty Committee will see that a good exhibit of Ceylon teas, coffee and cacao is made; while plumbago, cinnamon oil, etc., ought to come from the Colombo merchants. I have asked for a copy of the official letter to Government which, however, you may already have seen in the *Gazette*. If not, here it is:—

London, 24th January 1896.

The Hon. the Colonial Secretary, Colombo, Ceylon.

Sir,—We have the honour to address you, having received a communication from Sir Robert Meade notifying us that the Colonial Office has sent out a despatch to your Government, respecting this Company's forthcoming Exhibition:—

Empire of India and Ceylon Exhibition, 1896 including other Crown Dependencies in Asia.

We understand that this despatch has been supplemented with a copy of the Report of the Empire of India Exhibition of 1895, together with our various printed matter in connection with the forthcoming Exhibition of 1896.

A perusal of the Report will we think convince your Government of both the ability of this Company to adequately carry out their scheme for the forthcoming season as well as convey some idea of the substantial commercial advantages likely to result from co-operation therewith.

We feel that our enterprise should commend itself to your Government in view of the fact that the Empire of India Exhibition 1895 was a purely tentative effort, and the first time that any undertaking of this nature has been carried to a successful issue unaided by a Government grant.

Now that the Company have practically proved their capabilities, they trust that your Government may be so good as to extend to them their cordial assistance, and also permit themselves in some way or other to officially recognise this enterprise, (a recognition which has been accorded by the Indian Office) without which we fully appreciate that no commercial undertaking like our own can meet with any substantial adhesion.

The Directors are now in a position to state that the prominence given at the late Exhibition to Indian products, especially to Indian tea and tobacco proved a direct benefit to Indian trade, to the extent of not less than £75,000. We think that such results, achieved by a private Company, without the slightest charge against Indian revenues, compares most favourably with those of the Colonial and Indian Exhibition of 1886.

Although such a large measure of success has attended the efforts of this Company, it is still felt that India was but inadequately represented, and that nothing like justice was done to her.

This consideration has largely influenced this Company in deciding to continue the Empire of India Exhibition this year, and rendering the same more important and interesting by the inclusion of Ceylon and our Asian Crown Colonies, thus giving a more complete idea of their almost inexhaustible economic resources.

Briefly, the following are the principal matters and suggestions to which we are desirous of drawing the attention of your Government.

1. BUILDINGS.—It is intended to devote a large space for the erection of buildings of Ceylon Architecture, and also to set aside a considerable area in the Queen's Palace for a Ceylon Court for Sinhalese exhibitors.

2. Native Exhibitors.—The Company being aware that native exhibitors cannot take active part in the Exhibition without considerable outlay, are willing to waive premiums in advance for the space occupied which is a necessity in Exhibitions not depending upon Government aid, and to accept in lieu thereof a moderate percentage on their gross sales.

3. Still Exhibits.—This concession does not apply to what are termed "still exhibits" that is to say, show cases without attendants, where no selling is done; for the latter however when of *bona fide* Ceylon industries, liberal arrangements will be made.

4. Staple Products.—Our Company are very anxious to give special privileges and prominence to the more important staple exports of the Colony, such as, tea, coffee, cocoa, and the valuable and numerous products of the coconut palm.

5. Loan Collection.—Deeming it desirable that we should convey to the visitor some adequate idea not only of the products and manufactures of the Colony, but also the typical features of the country and her art developments, considerable space will be reserved in the Ducal Hall for a Loan Collection of Ceylon Art Work, including Historical Records, pictures and views of the Colony, carved wood, arms, armour and metal work of all descriptions, embroideries, and in brief all ornamental manufactured articles. We particularly desire the co-operation of your Government in this direction.

6. Collective Exhibit.—We would point out that whilst at the Imperial Institute your Government have very liberally represented the staple products of the country, the Art Manufacturing side of it is not represented at all; and feeling that these are a class of goods which meet with a ready sale in European countries, and only require more prominenly bringing before the public to much increase the trade therein, is the reason why we seek the co-operation of your Government in this section, and ask them to get together as widely representative a collection as possible for exhibition.

Our suggestion is, that at the close of the exhibition, this collection should be handed over to the Imperial Institute.

For the installation of such a collection, our Company are prepared to pay all expenses for carriage and freight, and insure the goods to their full value whilst in our custody as well as to allot the space free of charge.

7. Native Performers.—With the idea of making the Ceylon Section popular, it is intended to include one or more troupes of Sinhalese performers. The public will by this means obtain some adequate conception not only of the products and arts of Ceylon, but also of its people and their country, and we trust your Government will give what permission may be necessary to enable the performers to leave the country; our Company guaranteeing their return passage.

8. Government Buildings.—We believe that your Government have in their possession some of the buildings erected in the Ceylon Section for Chicago. Could the loan of these be made available for the purpose of a tea house?

We are sending you by the same mail duplicates of our printed matter.

Finally, it is intended to open the Exhibition early in May, and all goods should be delivered here by not later than the 15th April.—I have the honour to be, sir, your obedient servant,

(Sgd.) Herman Hart.

It speaks for itself. Mr. E. B. Creasy is the Colombo Agent—there could not be a better—of the Exhibition which is certain to be a great success, even if Ceylon does not do justice to itself—as I hope it may in all departments.

IN THE CITY.

Poor prices for tea notwithstanding high exchange is not satisfactory news; but this is a slack time in the

TEA TRADE

for there is nothing in Supplies or Stocks to justify depression, even though February Colombo shipments were heavy. One question asked is how does the tea distributing trade falling more and more into the hands of half-a-dozen or so big firms and companies affect Mincing Lane. Suppose a few even of such big buying houses to hold aloof from a sale, does not it make a vast difference? Exchange has been receding a little and may go lower when all is settled for the Chinese Loan, though there are City men who think it may go higher yet this year—even to above 1s 3d and yet higher prices for tea plantations are asked! For a compact Udapussellawa-Nuwara Eliya place I hear the rate demanded is equal to £109 per acre! Lippakelle has to account for much.

Mr. Alfred Brown, Chairman, and Mr. Roberts the Secretary of the group of (Uva) Spring Valley and Hunasgiriya Company I found well and interested in all that concerns the island's progress: they anticipate Mr. Wardrop's arrival home. Mr. Alex. Thomson leaves in a fortnight by the ss. "Orient."

It is just possible, though by no means decided, that

MR. A. H. DUNCAN

(brother of Messrs. John and Hamilton Duncan), so well-known as an experienced Rangala coffee planter and clever all round, may get the appointment to visit and report on the coffee lands of the London-Columbia Company which is expected to have a capital of £100,000 at its command.

RESPECTING CEYLON TEA COMPANIES

with rupee capital, I have the following expression of opinion from a broking friend:—

"Letters from Ceylon inform me that the rise in exchange has put a damper upon the share market there, and I am just afraid they have been choking themselves, for the small number of dealers is not enough to keep up strength during a time of depression, so that they are now anxious to form a market here which I have urged them to do more than a year ago. Everything was then on the boom and their quotations were always too high. The only safety is to take advantage of the London market now and convert two or three companies into one, the shareholders taking their interest in sterling and ask for a small sum from the London subscribers and they would reap their profit from increased value of their shares. This I have repeatedly suggested, for, unless they do something of this kind, difficulties will arise."

The planters of Ceylon and indeed of other lands have had no better or more intelligent and energetic friend in many ways than

"MR. THOMAS CHRISTY"

of Lime Street, and a chat with him always brings some topic of interest to the surface. It will be remembered how persistently Mr. Christy moved in reference to the sale of tea-sweepings from the various Docks, until now, in nearly every case, the stuff is denatured and prevented from coming into the tea market, though used for the extraction of caffeine, &c., Our tea planters owe Mr. Christy their thanks for this action. Now in respect of

COFFEE ADULTERATION

a far more important matter than the abolition of the Coffee duty, Mr. Christy is interesting himself very actively. He has stirred up the Public Analysts by showing them how they are down on the poor farmers, dairymen, spirits sellers and a host besides, for anything like mixing or adulteration, while coffee dealers may sell 90 per cent. of chicory to 10 of coffee, with impunity! The London Chamber of Commerce is likely to move in the matter.

## INDIAN TEA.

To the Editor of the *Financial Times.*

Sir,—Having read the article in which you brought Indian tea planting companies before your readers as a suitable channel of investment, it occurs to me that you may possibly like to have some confirmation of your advice from one who has long been conversant with the position and development of the industry as a tea-taster and agent in the London market for some of the principal growers.

So little has been known in the past about this branch of our commerce that it is not surprising that investors, as a rule, have regarded it with diffidence, or have altogether ignored it. But the experimental stage has long been passed, and we have now the benefit of some fifty years' experience with the result that it is proved that nearly all, but not quite all, plantations in India are permanent in respect of soil and the capacity of plant to yield freely and vigorously; that while weather causes some variation in the amount and quality of the yield, such a thing as the failure of a crop is unknown, and that no limit has yet been found to the consumption of Indian tea.

A most important fact is, that the oldest plantations in Assam still produce the finest tea. Proof of this is to be found in the history of the Assam Company, which has been at work since 1843, and last year showed a profit of £50,000 on the season's production, equal to more than 25 per cent. on the capital, and due to the fine quality of the tea produced. Another weighty fact is that no other tea-producing country has yet been discovered which can give tea equal to the best from Assam and Darjeeling. Another is, that notwithstanding the steady increase of production, there is in no market of the world a surplus stock of Indian tea, the year's consumption regularly using up all that is grown. Last year 135 million pounds were produced by India; of this, 120 millions at least will be used in the United Kingdom, and the remainder in other countries, where the use of Indian tea in place of China is rapidly increasing to a point which makes them keen competitors with English buyers.

The effect of these developments in trade has been to maintain the market value of Indian tea well above the cost of production. You may like to know some details. A crop of "common tea" costs from 5½d to 6d per lb. to make, and realises 7d to 7½d per lb.; a smaller crop of "good tea" costs about 7d per lb., and realises from 9d to 10d; a still smaller crop of "fine" tea costs from 9d to 10d, and realises from 1s up to as much as 1s 6d per lb. There is, therefore, a good margin left for lowered market value or increased cost of manufacture. The items that would increase cost are: a rise in the value of silver, a rise in freights, or a scarcity of coolie labour.

So much with regard to the general position and prospects of the industry. The would-be investor will, of course, want to know which are the strongest and soundest of the many companies, but it is not my purpose to tell him. Some general hints, however, may perhaps be given. These are: To notice the capital cost per bearing acre, and prefer those whose gardens show a low cost; to ascertain what additions to the planted area have been made out of the profits of past years; to discriminate between those who pay dividends and also create reserve funds, and those who do not; to inquire what is the average value of the tea produced, and if the estates are situated in the best districts.

Most of this information can be found in the elaborate tables of statistics now published by some of the stockbrokers, who are beginning to realise that 6 per cent. or 8 per cent. can be obtained on investments in Indian tea with much less risk than is run in many kinds of industrial and commercial concerns for the sake of 5 per cent. From a shareholder's point of view it is much to be desired that the older companies would rearrange their capital on a modern basis, divided into the preferred and deferred shares of small nominal amount that the investor of today so much prefers.—I am, &c.,

ASSAM.

—*Financial Times,* March 11th.

## AGAINST A DUTY ON TEA.

The following petition has been prepared and circulated by a tea buyer on the East Side. Mr. C. R. Banks, expressing, as he claims, the opinion of a large number opposed to a duty on tea:

*To the Honorable House of Representatives Washington, D. C.*

We, the undersigned citizens, merchants and tea dealers, learning that a bill is to be presented to Congress to impose an import duty on tea, beg to present for consideration the following objections to such duty:

Such a duty as is proposed was in force for a number of years. It was repealed, so that all, no matter what their circumstances, might have at the lowest possible cost, and enjoy without tax "at free breakfast tables," an article so indispensable that it has almost or quite ceased to be considered a luxury.

The ostensible object of those who are desirous of imposing an import duty on tea is that the standard of quality would thereby be raised, which object can be equally obtained by the more stringent enforcement of existing laws for the inspection of tea at the port of entry, without imposing a tax on the poor man's comfort and consolation.

We humbly pray your honorable body not to reverse the wholesome and consistent policy now in force for twenty-three years, keeping a staple article of daily use free from taxation, which falls heavier on the poorer classes than on those better able to contribute to the support of the Government.

We further desire to call attention to the fact that the proposed tax is sought to be imposed chiefly in the interest of large capitalists, as such a tax by almost doubling the import cost of the article, would be a burden upon the dealers of smaller means.

We beg to submit that the existing laws for the inspection of tea of a healthful and resonable standard can and should be maintained at all ports of the United States, and that no duty be imposed for the benefit of a few capitalists and to the detriment of the public at large.

There is nothing in the present revenue laws which forbids the entry of clean, low-priced tea. The decline in tea since 1872 has not tended to increase consumption, which was larger per capita in 1872 and 1873 than it has been since, and greater in 1886, 1887 and 1888 than at any time since. In 1873 and 1874 the average import price of tea was 37½ cents, and now, when it has fallen to 15 cents, we find no increased use of the article, conclusively showing that the American people do not care for tea as a beverage. Beer and coffee are the favourites. Is it any wonder that the tea trade does not increase when the bulk of the importations are cheap and herby teas, giving forth a flavour that does not captivate and win the palate? Not one consumer in fifty drinks tea for the sake of that flavour but simply from habit or through the natural carving for a warm drink. Does anyone imagine that cheap, poorly flavoured coffee, or coffee mixtures, tend to increase consumption? The introduction of the portable coffee mill into the grocers' shops did more to make coffee the popular beverage it is than did making coffee duty free. It forced the sale of roasted coffee in the bean, while competition kept up the quality and stimulated the sale of pure coffee.

Mr. Banks claims that tea has "quite ceased to be considered a luxury," Simply, we believe, because of inferior quality. Tea should be regarded a luxury, as coffee is, which pleases the palate and awakes good cheer and brings comfort. If the people were educated to an appreciation of tea for its delicate and peculiar flavour and for its marked characteristics, the trade would make more money than it does now and the people would worship the teapot as they adore the coffee urn, the chocolate cup and the beer mug.

If Mr. Banks went into the tenement districts and the slums he would be surprised to find the poorest of the poor buying the better grades of tea, unless forced by the most abject poverty to crucify their desires. What the tea trade want is a campaign having for its object to demonstrate to consumers,

there is as much of delight to the senses in a cup of hot, fragrant tea as in glass of Madeira, sherry, rich old Burgundy or a well seasoned Sauterne. A tax would tend to improve the character of the imports and would give the Government ten millions of revenue, so distributed as to be felt by no one. If the tax be ten cents per pound it means that each cup of tea is taxed one-third of one mill. Let us have a duty on tea and coffee, with an additional tax on beer, as a measure of revenue only.—*American Grocer*, Feb. 26.

## THE ASSIMILATION OF NITROGEN BY TEA-PLANTS.

DEAR SIR,—In his note on "Assimilation of Nitrogen through the Agency of the Root Tubercles in certain Papilionaceæ" published as an enclosure to Mr. G. W. C. Cock's letter on pages 5 and 6 of the January number of the *Indian Forester*, Mr. Cock recommends the planting of Saw (*Albizzia stipulata*) or the Sensitive plant (*Mimosa pudica*) in tea gardens for the fixation and storing of nitrogen the nodules of its roots for the use of the Tea plants. Both the Saw and the Sensitive plant belong to the sub-Order *Mimoseæ*. As far as I have read the recent literature on this important subject of assimilation of the free nitrogen of the air in the root tubercles of plants. I have not come across any writer who claims this precious property for the roots of any other plants than those of the Papilionaceæ. I am therefore led to ask you, Mr. Editor, to kindly state for the information of your readers in your next number of the *Forester* whether all or any of the plants of the sub-Order Mimoseæ also possess this inestimable property of fixing the free nitrogen of the air in their roots. M. R.

*Note*.—Our correspondent's question is practically answered in Dr. Watt's paper published at page 343 of our Vol. XXI; we regret we can give him no further information.—*Indian Forester*, March.

## MARKET FOR TEA SHARES.

There is still a large amount of inquiry for Tea Companies' Shares, and again the "official list" shows, during the week just closed, a large number of advances in quotations, while many of the Money Market Reports in the daily Press make pointed references to these investments.

The *Financial Times* again makes some special reference in its leaderettes to the progress made in the opening of fresh channels of consumption for Indian and Ceylon tea.

MINCING LANE, with rather more limited offerings, keeps steady, but without any very noted advance in values. The estimate of immediately-expected supplies continues to be decreased. Indians have pretty well come to an end, and the March exports from Ceylon now look like being reduced in quantity.

FRESH ISSUES.—Dimbula Valley Ordinary have changed hands at 1-16 under par, while the Prefs, have again being placed freely at 6.

CEYLON SHARES.—C. T. P. Co. Ordinary are said to have changed hands as high as 27½, and the Prefs. have been taken at 17½.—*H. & C. Mail*, March 20.

## TEA IN AMERICA.

New York, March 11.

At the last auction sale the market was very well supported on high grade Formosas, but low grade sold off and ruled weak. Other descriptions are steady and without change with demand light.

Last Wednesday the Montgomery Auction and Commission Company sold at auction 8,779 packages teas as follows:—Moyune—50 Hyson 6½ to 6¾c; 547 Young Hyson 7 to 20c; 215 Imperial 12 to 16½c; 174 Gunpowder 12 to 25½c. Ping Suey—13 Young Hyson 9¼c; 451 Imperial 8 to 13c; 1,654 Gunpowder 7¾ to 24c. Japan—70 Pan Fired 9¾ to 12c; 25 Capers 16c; 593 Congou 8½ to 16c; 180 India and O. Pekoe 11¾ to 21½c. Oolong—2,352 Foochow 8¼ to 20c; 2,463 Formosa 13½ to 46c. High grade Formosas were well supported and higher, while low grade blacks went off.

Today at noon the Montgomery Auction and Commission Company will sell 9,602 packages, viz., 1,716 half-chests Moyune, including "Choicest" Moyune Chops; 2,785 boxes Pingsuey; 32 half-chests Japan, basket-fired and sun-dried; 1,183 half-chests Congou, including some particularly choice lines; 102 packages India, Java, Ceylon and Pekoe; 50 half-chests Amoy; 1,037 half-chests Foochow, new season's; 2,647 half-chests and boxes Formosa, all new season's and comprising some choice teas.—*American Grocer.*

## THE TEA MARKET

remains much as before, with more than the lower qualities available than can be readily disposed of. The free imports from Ceylon are generally disappointing, whereas it is to that country good quality was looked for to meet the demand at a time when standard teas are at the lowest ebb. All "stand out" teas are readily competed for—an encouragement to intending operators in China. Deliveries, both for home consumption and export, give highly satisfactory evidence of the increasing use of tea.—*London and China Express*. March 20.

## PLANTING AND PRODUCE.

PRODUCE AND ADULTERATION.—The twenty-fourth annual report of the Local Government Board on the adulteration of food samples for 1894-95 has just been issued. So far as the reference to tea is concerned, it is not at all disturbing to the public mind. Five hundred and twelve samples of tea were taken, and one was condemned because it contained an excessive quantity of mineral matter (including minute particles of glass, straw, woody fibre, etc., suggestive of shops sweeping) Four samples, although passed by the analyst, were found to be impregnated with lead. In one case legal proceedings were taken against a person for refusing to sell a sample of tea to an inspector, and a fine of £2 was inflicted. Of 1,724 samples of coffee examined, 180 (or 10·4 per cent) were condemned. There is an element of satisfaction in this when it is remembered that for the ten years after the passing of the Act of 1875 the average percentage of adulterated coffee was eighteen. Legal proceedings were taken in 126 cases, and 112 penalties were imposed, amounting in all to nearly £140. Of sugar, 397 samples were analysed, and twenty-nine were condemned. Most of these were beet sugar coloured to imitate Demerara sugar, but four samples contained small proportions of mineral matter. Small fines were inflicted in nine cases.

TEA *v.* TOBACCO.—When Indian and Ceylon tea planters set about the capture of the American tea market they did not contemplate that the demand for tea would be increased owing to the new use for it as a substitute for tobacco. It appears from American papers that the craze for smoking cigarettes made of tea is rapidly spreading among women in the United States. To make the tea cigarette one takes a grade of green tea which has but little dust, being composed of unbroken leaf, and dampens it carefully, just enough to permit the leaves to be unrolled without being broken, and so to be left pliable and capable of being stuffed in the paper cylinder, while the dampness is not sufficient to stain the paper. The cigarettes are laid aside for a few days, and are then ready to be smoked. The feeling of a tea cigarette in the mouth, says an American contemporary, is peculiar. The taste is not so disagreeable as might be supposed, but the effect on the tyro is a sense of dizziness and a disposition to take hold of something or to sit down. If the beginner leaves off then, that settles it; she will not try tea cigarettes again. If, however, the smoker sit down an try a second cigarette, inhaling it deeply, then the dizziness passes, and is succeeded by one of intense exhilaration. This stage lasts as long as the smoking

continues, which is until the reaction of the stomach sets in. Words cannot describe the final effect of the tea cigarette. The agony of the opium fiend is a shadow to that of the nauseated victim of the tea cigarette. It will be hours before food can be looked at, yet the first step towards a cure is a cup of tea. An hour afterwards comes the craving for the cigarette. A tea cigarette, in the quantity of tea used, is about equal to the tea for two cups of pretty strong green tea, and, being inhaled instead of taken in the form of an infusion, its action is about ten times as great. If a tea smoker gets through twenty cigarettes a day he takes the equivalent of about forty cups of tea as regards the quantity consumed, or of 200 cups as regards the effect. This shows at once what the result in the nervous system will be. The tea cigarettes are on sale in New York at several first-class stores of cigar dealers who have a women's trade, and this has come about simply because the women ask for them.

THE COFFEE TRADE AND THE CHANCELLOR OF THE EXCHEQUER.—A large attended meeting of merchants, brokers, and dealers interested in the coffee trade was held last week at the London Commercial Sale Rooms, Mincing Lane, for the purpose of appointing a committee to formulate a system for the better working of coffees in bond, to be submitted to the Chanchellor of the Exchequer. Mr. George Rouse presided. Mr. R. Wales said that the resolution he wished to propose was as follows: "That a committee of import and export merchants, home-trade dealers, and brokers be formed, with the object of formulating a system for the better working of coffees in bond, and that the committee do report to a general meeting of the trade the result of their deliberations, prior to placing it in the hands of the Chancellor of the Exchequer for his consideration. He said he would like to remind the meeting that the movement was not a new one, but had arisen out of the conference which the trade recently had with Mr. Goschen—which conference took place with the sanction of that room. They were aware that, on that occasion, they did not succeed in getting the Chancellor to abolish the duty, but he gave them an intimation that if they would put before him any plan or scheme by which difficulties in the present bonded system could be removed—difficulties that prevented the expansion of the export trade, he would be very glad to receive and consider it. The object, therefore, in appointing the committee was to lay before the Chancellor some definite plan for improving the bonded warehouse system, and which he was quite prepared to listen to. He did not think there would be any difficulty in appointing the committee, for it was thought very desirable that any plan which they might devise should have the entire approval of the trade, so that they would be able to tell the Chancellor that the scheme embodied the opinion not of a few individuals, but that it was the opinion of the whole trade. With that object in view they proposed that the committee, if appointed, should do nothing without it was first submitted to a general meeting of the room. It was an eminently safe course to propose the formation of a committee, and if that were agreed to he would then submit the names of the gentlemen who they thought should constitute the committee. Mr. Asser seconded the motion, which was carried *nem con.* A committee consisting of the following gentlemen was then formed: Mr. Oschwartz (Messrs. F. Huth and Co.), Mr. Julius Ehmann (Messrs. Edward Schluter and Co.), Mr. J. Davies (Messrs. Peek Brothers and Winch), Mr. Landsberg (Messrs. Landsberg and Co.), Mr. R. Wales (Messrs. Moffat and Co.), Mr. E. A. Rucker (Messrs. Rucker and Bencraft), Mr. George Rouse (Messrs. R. J. Rouse and Co.), and Mr. J. C. Sanderson (Messrs. Sanderson and Co.).

JUTE SPINNING IN GERMANY.—The movement for extensions of jute spinning and weaving in Germany seems to be spreading, in spite of the warnings of the recently dissolved association of manufacturers. It is stated that the directors of the North German Jute Spining and Weaving Company, of Hamburg, have decided to add 4,000 fine spindles and 188 looms to the machinery of the mills in Schiffbek and Ostritz, and to erect 2,000 fine spindles and 52 looms in the mill of the affiliated Alsacian Jute Spinning and Weaving Company at Bischweiler, so that, to the three mills, there will be an addition of 6,000 spindles and 240 looms. Following the example of the Hamburg Company, the Bremer Jute Spinning and Weaving Company of Hemlingen is about to add 1,500 spindles and 110 looms to its existing plant; and the Bremen Jute Spinning and Weaving Company has decided to add 6,000 spindles and 330 looms to its producing power.

AIR PLANTS.—At a meeting of the Royal Botanic Society held on Saturday, Mr. John Birkett in the chair, the Secretary, Mr. J. Bryant Sowerby, called attention to a number of species of the so-called "air plants"—tillandsias—exhibited from the society's collection. In the forest of the West Indies and tropical America these plants are found growing upon the branches or trunks of trees high above the ground, and as they are easily moved, and, moreover, very ornamental when in flower, the natives pull them down and attach them to wires from their verandahs, where they live for months without attention.—*Home and Colonial Mail*, March 20.

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## THE NAHALMA TEA ESTATE COMPANY LIMITED.

Board of directors: Arthur Marshall, Esq., Chairman William Forsythe, Esq. (in Ceylon), and John Abernethy, Esq. Office: 29, Victoria Sfreet, Westminster, S. W.

The following is from the report of the directors to be presented to the shareholders at the second annual ordinary general meeting to be held on Thursday next.

The directors have the pleasure to submit the general balance-sheet and profit and loss account for the twelve months ending December 31st, 1895, duly audited. The net amount at credit of profit and loss account at December 31st, 1895, after providing for general expenses, directors' and auditors' fees, interest on debentures, &c., £2,043 0s 6d An interim dividend of 3 per cent. on the ordinary shares was paid October 3rd, 1895, amounting to £420. It is now proposed to pay a final dividend on the ordinary shares at the rate of 5 per cent (making a distribution for the year of 8 per cent per annum free of income tax), which will absorb £700; it is proposed to place to credit of Debenture Redemption Fund, bringing it up to £1,267 16s 2d, £625; it is proposed to write off the amount expended during the year 1895 upon new turbine, £168 3s 3d; leaving to be carried forward to next year, subject to payment of income tax on profits, a balance of £129 17s 3d.

The directors recommend the distribution of a final dividend at the rate of 5 per cent on the ordinary shares of the company, payable on April 30, 1896, making, with the interim dividend paid October 3, 1895, a distribution at the rate of 8 per cent per annum for the year ending December 31, 1895, such dividend to be paid to those shareholders whose names appear on the share register on March 26, 1896 after which date such shares will be transferable ex such said dividend. The acreage of the company's properties on December 31 last was: Tea in full bearing, 446; jungle, 246; total, 692 acres. The superintendent reports the estate in good order, that the erection of the turbine and reservoir is now nearing completion, that he is more than ever satisfied that it will prove economical, and that Messrs. Walker and Co. have given substantial work. The crop for 1895 was 235,974 lb, as against an estimate of 220,000 lb. With a favourable season the crop for 1896 is estimated at 240,000 lb. Mr Arthur Marshall, the director retiring by rotation, being eligible, offers himself for re-election. Messrs. Fox, Sissons and Co, auditors to the company, offer themselves for re-election.—*H. and C. Mail*, March 20.

## LIBERIAN COFFEE.

The African republic is looked to for a coffee crop of 50,000 piculs this year, against 30,000 piculs produced in 1895.—*American Grocer*, March 11.

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## IS THE LANTANA A FRIEND OR AN ENEMY?

SIR,—The Lantana is an abomination, we shall all agee in th it, but I am strongly of opinion that it is an abomination that we shall have to put up with, and in many cases, ought to encourage. We have no sufficient experience to come to a decided opinion, but I fancy I see in the Lantana "the way out" of more difficulties than one, notably as a means of taking possession of the soil to begin with, and protecting the young plants afterwards. I hope no Forest Officers will waste money trying to exterminate this shrub, except by the legitimate method of inserting young plants which will eventually kill it out by their cover. VELLEDA.

—*Indian Forester* March.

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## THE INDIAN TEA ASSOCIATION (LONDON).

### FURTHER INTERIM REPORT OF THE AMERICAN AND FOREIGN TEA COMMITTEE.

The following is the Committee's interim report on its operations since the issue of the general report on July last:

In response to the circular, issued by the direction of the Committee on September 25 last, requesting that subscriptions to this fund for the past season should be based on the scalo of four annas per acre, and half anna per maund of tea, a total sum of R88,879-7-0 has been subscribod, representing a production of 77 million pounds of tea; this includes a generous contribution from the Central Travancore Planters' Association of Southern India.

Mr. Blechynden, tho representative of tho Association in America, has, under the direction and supervision of your Committee, continued to display much energy and ability in calling attention to the teas of India by advertiscments, paragraphs in newspapers, supplying tea free as a beverage in places of public resort, &c., and has also arranged in conjunction with the Ceylon Commissioner to co-operate with private firms and others engaged in selling British-grown teas by granting subsidies to their advertisements, and other similar measures.

With reference to the disposal of the fund collected, the Committee have to report that they havo spent, or authorised to be spent, up till the end of June next, the sum of £5,300, which is made up approximately as follows:—Salaries, travelling, servants, office, &c., £1,300 newspaper articles, £500 advertising £700; food shows, tea demonstrations, &c. £800; subsidies, £2,000; total £5,300.

The results of the various efforts made to obtain a footing in the markets of America are shown in the valuable statistics published by Messrs. Gow, Wilson, and Stanton. From these figures it will bo seen that the increase in consumption is satisfactory. The total quantity of British-grown tea taken by the United States and Canada during tho last six years has been: 1895, 9,283,144lb: 1894, 5,379,542lb; 1893, 4,211,075lb; 1892, 3,208,655lb; 1891, 2,635,772; 1890, 2,364,152lb.

Of this quantity the amount of Indian tea used was as follows:—Re-exports, U.K. to U.S.A., 1895: 198,619lb; re-exports, U.K. to Canada, 821,195lb; transhipments, U·K· to U.S.A., 1,549,501lb; transhipments, U.K. to Canada, 750,280; direct exports, Calcutta to North America, 1,134.432lb; total 5,154,027lb. Re-exports, to U.K. U.S.A., 1894: 708,921lb; re-exports, U.K. to Canada, 711,284lb; transhipments, U.K. to U.S.A., 768,404lb: transhipments, U.K· to Canada, 127,621lb; direct exports, Calcutta to North America, 551,750 lb.; total, 2.867,980 lb. Re-exports, U.K. to U.S.A., 1893; 848,302 lb.; re-exports, U.K. to Canada, 648,271 lb.; transhipments, U.K. to U.S.A. 352,961.; transhipments, U.K. to Canada, 154,713 lb.; direct exports, Calcutta to North America, 187,798 lb.; total, 2,228,045 lb. Re-exports, U.K. to U.S.A., 1892: 600,216 lb.; re-exports, U.K to Canada, 789,065 lb.; transhipments, U.K. to U.S.A., 121,958 lb.; transhipments, U.K. to Canada, 25,187 lb.; direct exports, Calcutta to North America, 81.862 lb.; total, 1,618,288 lb.

It has been suggested that the teas of India and Ceylon have now obtained a footing in Western markets, and that the ordinary trade organisations and commercial rivalry of keen business men may be left to push British-grown teas into consumption. The committee are strongly opposed to this view, for, having regard to the very large extensions which are coming into bearing both in India and Ceylon, they are of opinion that it would be a grave error to leave, at present, entirely unaided the extension of consumption in the United States. It is, thereforo, essential, in their opinion, that there should be a levy for the season of 1896, on the same basis as in the past year, and that immediate steps should be taken to collect subscriptions.

Should the whole of the fund thus raised not be spent in America, the committee would be prepared to support efforts to extend new markets in Russia, South Africa, and other places.

The committee have much pleasure in testifying their satisfaction with the work done by Mr. Blechynden during the period under review.

### ABSTRACT OF PROCEEDINGS OF A MEETING OF THE GENERAL COMMITTEE OF THE ASSOCIATION, HELD ON TUESDAY LAST.

The minutes of the preceding meeting were read and confirmed. A letter was received from Mr. George Williamson regretting his inability to attend, and asking to be allowed to resign the office of vice-chairman, owing to ill-health. The secretary was requested in reply to express the regret of the General Committee, and to ask Mr. Williamson to allow his resignation to stand over until the annual meeting. A letter from Mr. D. M. Stewart was read in support of the movement for a further levy to continue the work in America. The chairman, in presenting the interim report of the American and Foreign Tea Committee, which was taken as read, said he thought that the meeting would generally agree that the Committe was working on the right lines. Mr. Blechynden had altered very considerably his plan of operations, which in place of consisting, as formerly, of native servants and food shows, was now chiefly carried on by means of advertisements and assistants given to firms engaged in pushing Indian tea, although he still occasionally made use of food shows. Mr. Raban wished to know of what basis the subsidies were given. The chairman stated that Mr. Blechynden gave a sum equal to one-third, or in some cases one-half, of the amount the firm was prepared to spend for advertising in order to increase their advertisement fund. Mr. Roberts wished to know if the amount of the proposed levy was to bo the same as last year. Tho chairman said the committee recommended a levy on the same basis as last year. Mr. Bryans said he had hesitated to recommend a continuance of the work in America, because he was the only member of the committee actually interested in spending more money in pushing the tea in America, although he thought it would be a great mistake to leave off just now. Since the report was printed he had received a letter from his New York Agents, which he asked permission to read to the meeting: "In regard to work which has been done by the Indian Tea Association in working up this market, I learn from Mr. Blechynden that there is a great probability of his being retired in May and, should this be the case, it would be a matter of regret for the India business, as Mr. Mackenzie has being telling us that a further large sum of some thousand pounds has been voted by tho Ceylon Committee for the continuation of pushing their teas on this market. . . . . It has taken Mr. Blechynden years to find the best means to use, and now that success has rewarded his efforts it would be a pity to send some new man to begin at the beginning again." From this letter it was quite evident that

his people over there had a high opinion of Mr. Blechynden. Mr. Blechynden and Mr. Mackenzie were pulling very well together now, and it would be a great pity to stop this. At the last meeting he had stated that he thought another year or two would be sufficient to open the American market, but he now thought it required still the one year more.

The Secretary then read the latest letter from Mr. Blechynden bearing on this point. After further discussion, in which the following gentlemen, Messrs. W. Roberts. George Seton, R. G. Shaw, R. Lyell, R. B. Doake, Arthur Odling, and J. N. Stuart took part, the following resolutions were carried unanimously 1. That this meeting is strongly of opinion that a further effort to carry on for another year the work of pushing Indian tea in America is essential, and it resolves that a further levy, on the same terms as in 1895, shall be made, and that the Calcutta Association be asked to collect the levy, as before, at the earliest date possible. 2. That this meeting desires to express its appreciation of Mr. Blechynden's services during the past year. 3. That either a letter be addressed to those leading companies and others who do not support the levy, or that a deputation be sent to them, the American and Foreign Tea Committee being left to determine the best means to obtain their support. 4. That Mr. C. A Goodricke be invited to join the general committee. 5. The subject of new rules was then brought before the meeting, and the rules as approved by the special committee, which had been circulated to all the members, were taken as read. After a full discussion, especially on the question of retaining a general committee as heretofore (which included nearly all the members), it was resolved :—That, with reference to observations that have been made, the new rules be referred back to the special committee, and subsequently be brought before the annual general meeting. 6. A vote of thanks was passed to the chair.—*H. & C. Mail*, March 20.

## THE DUTY ON COFFEE.

It cannot be said that the deputation of importers, exporters, home dealers, and brokers engaged in tho coffee trade, who had a formal interview with the Chancellor of the Exchequer at the House of Commons last week (a full report of which appeared in *The Grocer* of February 29th, pp. 512-14), met with much encouragement in the efforts to persuade him that a repeal of the duty on coffee is necessary and expedient in order to give the article free play and moro scope for its consumption in this country. There is hardly a dutiable commodity in the Customs tariff that requires more help and relief from the burden of taxation than coffee, and yet the Chancellor of the Exchequer makes light of it by telling his hearers that "if coffee and chicory were to pay no duty, cocoa also should be relieved from duty, and he (the Chancellor of the Exchequer) thought it was probable that if the matter went on further he would hear something from the consumers of tea and those interested in the trade." This is clearly an unfair way of viewing the question, as there is no parallel between coffee and cocoa, for the reason that tho latter flourishes astonishingly well under the duty it bears, and therefore does not need the same measure of legislative assistance; and as to tea, why, the answer to repealing the duty on that is quite as good as any of those that were rendered in favour of abolishing the duties on sugar, which event took place in 1874. Still, in upholding the views of those persons who are strong advocates for a "free breakfast-table," we, for our part, should be glad to see tho imposts on tea, coffee, cocoa, chicory, and dried fruits all swept away at a stroke; and especially those on the minor articles which yield only a paltry addition to the revenue of the country.

One of the speakers at the meeting put the whole case in a nutshell when he said that "on the face of the memorial there are two things—one is the smallness of the sacrifice asked for, and the other the benefit it would bring to a very large and important trade." In fact, the duty on coffee amounts to only about 170,000*l* per annum, whereas that on tea reaches no less than 3,696,000*l* in a single year, so that there is virtually no excuse, on any grounds that can be urged, for not repealing the impost on the former because it would, as the Chancellor of the Exchequer puts it, be unjust not to abolish the duty on the latter claimant for exemption. Coffee, as a harmless yet refreshing kind of beverage, is more beset with difficulties in its path to consumers than any other drink, and when these are duly pressed upon the attention of the Legislature it is for them to seek to remove them as quickly as possible. A great bar to the consumption of coffee in the United Kingdom is the absence of liberal supplies of a desirable character; and the main cause of its consumption not progressing at an advanced rate, since the duty was halved in 1873, has been the serious and alarming falling off in the imports from Ceylon, which, in consequence of the failure of the crop through the setting in of the leaf disease there, about the same year, have since dwindled almost to nothing. Substitutes, it is true, such as Costa Rica and other Central American descriptions, have been found for plantation Ceylon, but these have proved totally inadequate to make up for the deficiency in the receipts from Ceylon, and no fresh sources of supply have been opened up that would serve as a beneficial stimulus to the home trade.

In dwelling on the significance of the immense increase in the production of Brazil coffee, equalling "about 8,800,000 cwts., or something like two-thirds of the whole produce of the world," the Chancellor of the Exchequer ignored the fact that this enlargement of the available supplies did not flow hither so as to improve the position or prospects of the article in our own country, as the British consumers, as a rule, are not drinkers of Brazil coffee, it being notoriously unsuited to their taste; and thus it has followed that the prices of fancy coffees or of any grade approaching to excellence of quality—such, indeed, as could be used unstintedly at home—have considerably risen, making the berry in many cases extravagantly dear, and drawing a hard-and-fast line beyond which it is impossible for the consumption to extend. Again, the importation of cheap and adulterated preparations of coffee and "mixtures" has done a deal of harm not only to consumers, who have been deceived, but to honest traders, who have been repeatedly undersold in their own markets, without the least chance of redressing their wrongs, and who in their sale of the genuine product have been unable, through prolonged scarcity, dearness, and the oppressive duty on the unroasted coffee bean, to compete, with advantage, against their unscrupulous rivals in the trade. Much more could be urged on the same point, but sufficient proof has been adduced to show that the grievances of which the coffee dealers and others complain are of no common order; and while some remedy is needed to restore the trado to a healthy and prosperous condition, there is no surer or more fitting method than that of at once repealing the duty on the article.—*Grocer*, March 7.

SOUTH WYNAAD.—The *Madras Mail* directs special attention to the returns for the past season of the Perindotty Tea Estate, in South Wynaad. These are of special interest, in that the tea made in each month of the year is shown, which will enable planters to see when the flushes occur and labour is needed. The average yield of over 500lb. per acre is splendid, remembering what Mr. William Taylor, of Ceylon, has said about the *jât* of the bushes on this plantation. It will be noticed that Messrs. Patry and Pasteur record the sale of a small break of a tea from the Kanambyle Estate, Cherambadi, which averaged 10¾d per lb. being the same average as Assam for the week and 1¾d better than Cachar and Sylhet. This is the first sale of tea from this district of the Wynaad, and the price is most satisfactory. We hear that another break from the Mappadi district has also obtained an equally high average.

## COFFEE UP TO DATE.

We have before us a beautiful example of the ingenuity of our American cousins. It is cleverer than the wooden nutmeg famed the world over. It is concocted, like the Heathen Chinese card playing, "with intent to deceive," and it would no doubt deceive 999 persons out of every 1,000. It is an imitation coffee bean, and its uses are obvious.

It was accompanied by the following thoroughly business-like letter:—

[COPY.]

"The Dowling Manufacturing Company, sole manufacturers of Compressed Coffee Compound, No. 104, North 15th-street, Philadelphia.

"To the Wholesale Trade.

"Dear Sir,—Herewith we present for your inspection a sample of our coffee compound. It contains nothing but the [illegible] and healthful ingredients, and is mo[illegible] shape.

"By blending [illegible] coffee bean you can improve it and [illegible] the reach of those unable to purchase at the present high price of coffee.

"We sell only to the trade at 8 cents per pound, in barrels of about 185 pounds. F.O.B.

"Our process is patented.

"In ordering send sample of roast, so we can match your goods.

"Terms: 30 days, 2 off 10 days.—Yours, etc., The Dowling Manufacturing Co., 104, North 15th-street, Philadelphia, Pa."

It is a pity that so touching an object-lesson in American honesty should have come our way, for we feel it our duty to bring this latest fake in coffee, as we brought that of re-firing exhausted tea leaves before the Customs House authorities and the Board of Trade. They may curse us for disturbing their peaceful slumbers for any purpose other than that of drawing their salaries, but as we like coffee pure, we hope these authorities, in grateful memory of our many previous tips to them, will squelch this latest move in Yankee smartness.—*Food and Sanitation*, March 14th.

## OUR LONDON TEA LETTER.

(*From Our Own Correspondent.*)

March 6th, 1896.

### THE LONDON PUBLIC SALES.

There has been some interesting correspondence on this subject in *The Home and Colonial* of 21st Feb. Mr. F. D. Shillington advocates that the week's sales of Ceylon teas should be spread over two days instead of being crowded into the one day (Tuesday) as has been. He suggests that Tuesdays and Wednesdays be in future devoted to Ceylon teas, and Mondays and Thursdays will be given to the Indian instead of Mondays, Wednesdays and Thursdays as hitherto. This is a doubtless a matter calling for most careful consideration from all interested and most competent to judge, in order that all be arranged for the best interest of the producers and the convenience of the trade if any changes are desirable. It does not seem unreasonable that Ceylon, with her rapidily increasing trade should desire more time for her weekly offerings, but it may not be to the interest of India to submit to any curtailment. How is the fairest adjustment to be arrived at? Though Thursday is not a full day so far Mr. Shillington's proposal of two days for each would hardly be an equitable arrangement considering the present claims and future outlook of Ceylon and India respectively. If convenient for the buyers to have representatives at two sales at once, (and this may ultimately have to become the rule not the exception), it might suit to make Thursday both a Ceylon and Indian day and allow Mondays Tuesdays and Wednesdays to be occupied as at present. Friday being mail day, it is doubtless well to have it and likewise Saturday unappropriated as hitherto.

The other proposal of suggestion is, as in Calcutta, to have "an off" season, to cease holding any public auction of Indian teas for some weeks about June "to give 'the market' a period of rest, and to agree to a date upon which the first sales of new crop shall be held in London," and is called attention to by Mr. Herbert S. Parker of Messrs. Wm. Jas. and Hy. Thompson as "likely to be made to importers and then brokers by some of the London buyers." This seems a most reasonable proposal and a simpler affair than the other. It would also give more time for Ceylon produce which comes in more all the year round than the Indian; and most will readily assent to Mr. Parker's concluding remark,—"that the small intermittent sales during June, attended by unwilling buyers, are not altogether conducive to the interests of producers."

### GOVERNMENT STATISTICS OF TEA CULTIVATION.

Mr. O'Conor's note on this subject is most interesting. I will only notice one point especially referred to, that is the fact of the quantity of tea produced having increased during the 10 years under review (1893-94) in a much greater ratio than the area under cultivation.

This would seem difficult to account for. Of course young tea does not bear at all the first year, and very little for several years, in fact comes into bearing much more slowly than most allow for in their estimates owing to scarcity of labour, sickness, unfavourable weather, and the like, but this tells almost all the other way; the same may be said of the altered style of plucking which I understand has become more select and sparing year after year. It would also seem to me, judging from the districts with which I have the more intimate acquaintance, that the extensions of recent years must have been very fully estimated—nothing more likely when not actually surveyed by a reliable professional (as was very common in the early days of tea)—but this would likewise operate all in the opposite direction if it were so. It would therefore appear entirely due to the young planting in the decade previous to 1885 coming into full bearing during that under review. This can hardly be the only cause though those who extended in duller times are now reaping the benefit, and large extensions made during the last three years will likely come into bearing—for less remunerative markets where over-production is once more the cry! Perhaps some of your readers, Mr. Editor, will kindly clear up the point referred to.

One encouraging feature however is, the increase of consumption in markets outside the United Kingdom. This consumption in all amounted to 38 428,157 lb. last year against 29,453,539 lb. in 1894, 19,300,000 lb. in 1892, 13,400,000 lb. in 1890.—*Indian Planters' Gazette*, March 28.

## THE FIRST SUGAR MILL AT HANWELLA.

Hanwella, April 7.

The sugar mill recently got down by Mr. G. E. Amarasekara through Messrs. Walker Sons & Co. of Colombo, has been now put up in position and is worked by means of a pair of bullocks. It is capable of pressing three cart loads of sugarcanes a day. The juice thus pressed out is strained into three large copper vats which are fixed to an oven having a chimney twenty-five feet high at one end, and boiled into a consistency, removing all the scum, and poured into a wooden box with large ladles, where it is left to be hardened. When it is quite firm, it is cut with spades and removed in buckets to another wooden box, and left there till the sugar is separated from the treacle, when the sugar is gathered and dried, and put into bags for the market, and the treacle is poured into casks.

The tea estates at Hanwella and the neighbouring districts supply us with all the tea we require for our daily use, and cheap sugar was what we were badly in want of, which too has now been placed within our easy reach by Messrs. G. E. Amarasekara and D. J. Amarasekara Mudaliyar, whom we have also to thank sincerely for the introduction of new implements in our midst, for giving employment to the poor labourers, and also opening a market for the sugarcane growers in this district in the way of encouragement, we wish Messrs. Amarasekara all success and good speed in their new enterprise.

A Villager.

## THE RE-EXPORT OF TEA.

We recently offered some remarks upon statistics published by Messrs. Gow, Wilson & Stanton, showing the re-export of tea from the United Kingdom. That firm, in its Circular of March 13th, has amplified the information previously given on the subject. The added information is particularly full, interesting, and valuable, and tempts us to further observations relating to this topic. From the analysis now available it is evident that it is not alone with respect to the gross re-export that Ceylon takes the foremost position. With the exception of Holland and Turkey, the quantities of Ceylon tea re-exported to all the countries mentioned in the analysis is very largely in excess of that of Indian tea. In the case of one of the exceptions mentioned—that of Holland—it received 341,435 lb. of Indian tea as compared with 216,422 lb. of Ceylon tea from the United Kingdom during 1895. Why there should have been this exception it is not easy to discover. But we notice that Germany took of our teas 2,288,895 lb. as compared with only 424,100 lb. of Indian! Messrs. Gow, Wilson & Stanton intimate in a footnote their belief that the bulk of this exportation was intended for the Russian market. It would seem to be far from improbable that no inconsiderable portion of this Ceylon tea might also have found its way into Holland. If so, the almost single discrepancy existing would probably be largely redressed in favour of the Ceylon article. The large amount of excess of our teas re-exported to Germany heads the superiorities to be noticed in the analytical list. But that observable in the instance of America is of special interest to us just now. Of Ceylon, the United States and Canada received respectively 1,423,573 lb. and 1,033,646 lb., while of Indian the relative figures were but 998,743 lb. and 780,225 lb. during 1895. If this great superiority stood by itself, we might perhaps attribute the preference shown to some adaptability of the Anglo-Saxon palate to the flavour of Ceylon teas. But, as has been mentioned, similar superiority is shown in the case of Russians, French and Germans, so that the hypothesis we ventured upon when first discussing this subject of re-exports may be applied to all, or nearly all, of tea-drinking nationalities. Turkey has been mentioned as forming one of the two exceptions to what is observable as the rule. In her case she received 319,247 lb. of Indian and only 29,090 lb. of Ceylon tea. We have no means for judging as to any cause which may have led to this. Coffee is, however, so universally the national drink throughout Turkey, that it may be suspected that the consumption of tea in that country is limited chiefly to its French and English residents. Without touching further on particular countries mentioned in the analysis we may just refer to the figures grouped under, the heading "Other Places." In this instance the preponderance of Ceylon is very marked, the figures representing it being as 1,006,197 lb. against 638,345 lb. of Indian tea. After full examination of the details that Messrs. Gow, Wilson & Stanton have now afforded to us, we feel compelled to fall back still upon the hypothesis mentioned in our original article. In whatever light, or from whatever point of view, we may regard the figures given, all seems still to point to the assumption that the flavour of Ceylon teas is more generally and more widely appreciated than that of the Indian variety. But although we think such a view to be justified, it should not induce us to relax effort to maintain the superiority established in the outside markets of the world. As time goes on, and the taste for tea-drinking expands, India must reverse the present position, for she will be able to supply the increasing demand, while territorial restriction must keep Ceylon about at a standstill.

## CEYLON TEA IN LONDON.

A planting correspondent writes :—

"Buyers are holding off, the country demand has been so slack, and they seem to fear excessive supplies from Ceylon, but in this respect the latest Ceylon telegrams should reassure them, and we think we shall have a better market soon."

## INDIAN PATENTS.

Applications in respect of the undermentioned inventions have been filed, during the week ending 14th March 1896, under the provisions of Act V of 1888.

For a new process for the utilisation of the stones and seeds of fruit of the mango for the purpose of manufacturing paper.—No. 93 of 1896. The Aryan Company, general dealers and commission agents trading in the towns of Baroda and Surat, in the presidency of Bombay, for a new process for the utilisation of the stones and seeds of fruit of the mango for the purpose of manufacturing paper therefrom.—*Indian and Eastern Engineer*, March 28.

## WILL COFFEE PAY?

*To the Editor of the Central African Planter.*

Dear Sir,—I hear that opinion is gaining ground, that coffee planting in B. C. A. with the present methods, is not the remunerating investment it has been represented to be. That the average crop for the whole of B. C. A. for the years we have been planting, does not exceed 1½ cwts, dry parchment to the acre in bearing. That including weeding, cultivating, road and house building and repairs and general expenses, it takes £2 10s per acre per annum to keep a plantation in fair condition. That 150 acres in bearing at past output, hardly give a man a living much less save money, and if he keeps an assistant he will lose by his investment even with 150 acres in bearing at the average crop for the past. It is possible that our methods are seriously in error and yet surely it would have been discovered after so many trials for such a long period. The coffee tree seems to bear one good crop and then practically nothing for the two following years.—Yours faithfully,

A. C. SIMPSON.

MR. SIMPSON'S VIEWS ON COFFEE PLANTING.

As the *The Central African Planter* has not only a local circulation but goes to all parts of the world we feel it incumbent upon us to make a few remarks on Mr. Simpson's letter which appears in this issue. Our local readers are not likely so to be disturbed by Mr. Simpson's views but the same cannot be said of our foreign readers who are unacquainted with the facts. On what grounds, we would ask, does Mr. Simpson assert that 1½ cwt parchment per acre is the average crop for the whole of B. C. A.? So far as we are aware there is not one who can at present authoritatively state what the average crop for the whole district is, simply because we have no statistics to go upon and because coffee-planting at all extensively is only five or six years old. What we do know is, that coffee planting has been sufficiently remunerative in the past to encourge our oldest planters to go on extending their cultivation and taht the yield in many cases, especially in in the first years, has been very great. Mr. Buchanan in his article in our second number states an "average yield of three to four cwt may be reasonably looked for." He mentions instances of 7 cwt, and 8 cwt per acre being gathered as a maiden crop. Mr Hastings yield last year was between 3

and 4 cwts. Messrs do Josselin de Jong and Visser's Makungwa plantation gave about 7 cwts per acre and we believe the Messrs Pettitt Brothers got 12 cwts per acre. Mr. Simpson also states that coffee trees seem to bear ono good crop and then practically nothing for the next two years. This is a result which would follow planting in unsuitable soil, want of manuring, and exhausting tho trees by too heavy a maiden crop in any country. On the other hand coffee liberally manured and well cultivated goes on yielding year after year, witness Mr Duncan's letter on our last is sue in which he states that the last crop he off the mother tree of B. C. A., weighed seven and a half pulled pounds [parchment!] also Mr Buchanan's oldest Zomba coffee which boro last year a splendid crop and which has never been cut down. It is not only possible, it is certain, that our methods in the past have been in error and yet the results which have been obtained, although most of us knew nothing practically about coffee planting havo been most encouraging. Under such conditions it is certain, as Mr Scott-Elliot says, that there will be some failures. Lastly, the best coffee districts are also the youngest and their results are not yet forward. Cholo and South Mlanje have advantages in climate and forest land which the other districts lack and if cultivation is adequate there can bo no fear but that the best results will be realised.

## BOGUS OR ADULTERATED QUININE.

With quinine selling at the prices which have prevailed for a number of years past, it would scarcely bo thought to offer sufficient inducement for sophistication, as compared with many of the more expensive and almost equally salable drugs, to attract the cupidity of the class which finds honesty an uninteresting means of gaining a livelihood. Indeed, since the price declined below a dollar little has been heard either of its admixture with cheaper salts or their substitution for it in preparations supposed to contain quinine. The analytical investigator was wont in former times to discover gross frauds in the substitution of cinchonidia for quinine in pills, and even in bulk form, and to make his discovery the basis of a contribution to pharmaceutical literature, but there were seldom other evidences that the cheaper salt was usurping tho place of the other, and, outside of prepartions whose components were not definitely stated, it is, doubtful if the substitution was very largely practiced. During the last year or two, despito the fact that quinine has been selling at an average of less than thirty-fivo cents per ounce to the retail trade there has been a good deal of activity in "outside lots" offered through distinctively "outside" channels, and there is a suspicion that they have not been entirely straight. Samples of these lots submitted to pharmaceutical houses have been found to respond to the tests of pure quinine, but in several instances where offers to purchase have been conditioned upon a test of every can, the "representative of the owner" has found that the lot had already been sold. These goods have been represented, for the most part, as foreign brands held by a speculator in large bulk, and repacked for the purpose of effecting sales. In several instances the Reporter has endeavored to trace them to some responsible source, but never with success, and their amount or their final disposition has remained as deeply shrouded in mystery as the source whence they came. It is not probable, however, that the goods, whatever they were, ever found much of an outlet to the large consuming trade, and of late there has been evidence that they, or something similar, were being hawked to the drug trade through the country. The Reporter of last week contained an account of the operations in the West of one of the parties who was working this market less than twelve months ago with the same brand that he is now offering to the retail trade of the interior. A man of the same name has been a large buyer of cinchonidia in this market during the past few months, and it may fairly be assumed that this constitutes his stock of quinine, with the possible exception of enough of the genuine article to stand as a sample for testing in the event of tho buyers caring to make close investigation. It would appear, however, that Mr. Borst, that being the brand under which the gentleman was travelling, at last accounts, finds the retail trade of the country what might be termed an easy mark, and that they allow him to test his own samples with his own reagents. If such be the case, there would seem to be a favourable opening for some enterprising fakir to undertake the sale of gold bricks to the drug trade, for it is evident that the operations of the quinine swindler have been extensive and widespread. A short time ago this office received from a prominent jobbing house at the South an inquiry for some quick and trustworthy method of detecting cinchonidia, the writer stating that his customers were buying what purported to be quinine for less than he was paying the manufacturers, and that he was suspicious of its genuineness.

Of course, there are simple and safe tests which should make the successful substitution impossible, and buyers should not hesitate to apply such a test to every package coming to them through any irregular channel, or which does not have the indisputable evidence of being the original packing of the manufacturer. "Guarantees" are of little weight on goods of this class which have been repacked, because the necessity for repacking docs not exist, and is likely to be a mere subterfuge for sophistication. The standard brands of quinine are, or at least should be, familiar to every dealer in the article, and there is no reason why any desired quantity should not be furnished in packages of undoubted originality of packing. These facts suggested a safe-guard against fraud, and when to this is added a natural doubt concerning the integrity of anything that is offered much below current market prices, or by persons not directly in the business, there would appear to be no excuse for a druggist buying bogus quinine, unless he wanted to.—*Oil, Paint & Drug Report*, Feb. 24.

## INDIA AND CEYLON TEA.

Elsewhere attention is directed to the wonderful results of the campaign in the interest of tea produced in the colonies of the United Kingdom. One must admire the pluck, persistency and wisdom which has marked the operations of the Calcutta tea syndicate in this country. The hardest work has been to educate consumers to a proper use of India and Ceylon tea, a given quantity of which will produce a much stronger infusion than a like quantity of Japan and China tea. As a rule, the leaf is steeped for too long a time, and hence, an infusion results which is not as pleasing to tho palate as that to which the tea-drinker is accustomed. If buyers would follow the directions which every seller should furnish, and use less in weight, and infuse for five minutes or less, there would be a phenomenal increase in the use of English-grown tea. The finer selections of Ceylon and India tea, when properly infused, havo a delicacy of flavor and enough body to please the most fastidious. Some show the arome and color of tho finest wines, and this accounts, in part, of the great increase in imports.

In 1890 the total receipts in the United States, of Ceylon and India teas, were less than the re-exports from the United Kingdom to this country in 1893, during which year 4,211,075 pounds came to the United States and Canada; while in 1895 the receipts in the two countries wero 9,283,144 pounds, or nearly double; of this quantity 6,343,096 came to the United States. This is making grand progress. The success of the enterpriso is largely due to the intelligent efforts of the two commissioners, Messrs. Mackenzie and Blechynden, whose labors have been carried forward with discretion, skill and a perseveranco to command admiration.

From now on the pace forward is likely to be a much livelier one, and will be watched with intense interest by the tea traders of three continents.—*American Grocer*, March 11.

## TEA IN EUROPE.

It is evident that tea was known in Europe as an economic plant in common use among the Chinese many centuries before it had a place as a commercial commodity with the nations of Europe. Just when and how it was first introduced has not been settled. Mention of the plant and the tea-drinking customs of China are found in the records of the earlier travellers.

In the eighth century, Moorish adventurers made mention of the of China in their journals. In the year 1600 a Spaniard, "Texeria," noted tea as being as being used by the natives of Malacca. It was in general use in Persia in the seventeenth century, being mentioned by "Olearius" in 1633, as having been brought overland by the Usbeck Tartars.* Possibly tea may have been known in Europe in the fifteenth and sixteenth century, through travellers. Marco Polo resided in China for years in the fifteenth century, and it is not unlikely that, being a merchant, his attention was drawn to the universal use of tea in that country, and he prompted to send or take some to friends in Venice. The ships of the King of Portugal found their way to China in 1517, and it is scarcely supposable that the Chinese custom of drinking tea escaped notice.

The earliest positive record of the appearance of the fragrant leaf in continental Europe was after the formation of the Dutch East India Company, in 1602. This supposition is supported by a record made in 1588, by Father Giovanni Pietro Maffei, who, in alluding to his travels in China, says:

"They yet press out of a certain herb a liquor which is very healthy which is called *chia*, and they drink it hot, as do the Japanese. And the use of this causes them not know the meaning of phlegm, heaviness of the head, or running of the eyes; but they live a long and happy life, without pain or infirmity of any sort."

Another sixteenth century author, in a book published in Milan in 1596, and which was translated into English, says:

"They have also an herbe, out of which they presse a delicate iuyce, which serues them for drincke instead of wyne. It also preserues their health, and frees them from all those Euills, that the immoderate vse of wyne doth breed into up."

It is significant that Doctor Venner, in his "Via Recta at Vitam Longun," published in 1638, makes no mention of tea. The work treats of dietetics, and mentions the nature, character and dietetic value of the foods and drinks then in use in England. Lamb, who for fifty years was Master Cook to the Kings and Queens of England, makes no mention of tea in his "Royal Cookery; or, the Complete Court Book," published in 1710. It was advertised that year in the *Tatler*; or rather, a "Bohea Tea, made of the same Materials that foreign Bohea is made of, 16s. a Pound."

"A Poem in Praise of Tea" was issued in 1712 by an East India warehouseman, as follows.

"From boist'rous Wine I fled to gentle Tea:
For, Calms compose us after Storms at Sea.
In vain wou'l Coffee boast and equal Good;
The Chrystal Stream transcends the flowing Mud.
Tea, ev'n the Ills from Coffee sprung, repairs,
Disclaims its Vices, and its Vertue shares.

"To bless me with the Juice two Foes conspire,
The clearest Water with the purest Fire,
Wine's Essence in a Lamp to Fewel turns,
Exhales its Soul, and for a Rival burns.
The Leaf is mov'd, and the diffusive Good,
Thus urg'd, resigns its Spirits in the Flood.

"In curious Cups the liquid Blessing flows,
Cups fit alone the *Nectar* to enclose.
Dissembled Groves and Nymphs by Tables plac'd,
Adorn the Sides, and tempt the Sight and Taste,
Yet more the gay, the lovely Color courts,
The Flavor charms us, but the Taste transports,"
ect., etc.

* * *

Other bits of poetry of the same period indicate a general knowledge of the world's most famous leaf, as follows:

The muse's friend, Tea, doth our fancy aid,
Repress those vapours which doth the head invade,
And make the palace of the soul serene—
Fit on a birthday to salute our Queen.

—*Pope.*

And thou great Anne whom these realms obey,
Doth sometimes counsel take and sometimes Tay.

—*Pope's Ode on Tea to Queen Anne.*

There is plenty of evidence to show that it was an article of trade and commerce in England in the seventeenth century, and in general use early in the eighteenth, there being treatises on tea bearing date in 1730 and earlier.

In September 1658, the following advertisement appeared in different London journals: "That *excellent* and by all physicians approved *China* drink, called by the Chinese *Tcha*, by other nations *Tay alias Tee*, is sold at the *Sultaness Head*, a *cophee house* in *Sweetings Rents* by the Royal Exchange, London." This gives credence to the story that Oliver Cromwell had use for the teapot, which was found in the possession of an English collector.

There is preserved in the British Museum a hand-bill supposed to have been circulated between 1658 and 1660, by one Thomas Garway, "tobacconist, and seller and retailer of tea and coffee," and who thus described the famous leaf:

That the virtues and excellencies of this Leaf and Drink are many and great, is evident and manifest by the high esteem and use of it (especially of late years) among the Physicians and knowing men in France, Italy, Holland, and other parts of Christendom, and in England it hath been sold in the Leaf for six pounds and sometimes for ten pounds the pounds weight, and in respect of its former scarceness and dearness, it has only been used as a Regalia in high Treatments and Entertainments, and Presents made thereof to Princes and Grandees till the year 1657. The said Thomas Garway did purchase a quantity thereof, and first publicly sold the said Tea in Leaf and Drink made according to the directions of the most knowing Merchants, and Travellers into those Eastern Countries; and upon knowledge and experience of the said Garway's continued care and industry in obtaining the best Tea, and making Drink thereof, very many Noblemen, Physicians. Merchants and Gentlemen of quality have ever since sent to him for the said Leaf, and daily resort to his house to drink the Drink thereof.*

In A. D. 1660 the British Parliament imposed a duty of 8d per gallon on all tea made and sold in coffee-houses, and by an act framed in the same year the duties of excise on malt liquors, cyder, perry, mead, spirits and strong waters, coffee, tea, sherbet and chocolate, were settled on the King for life. That year tea sold in England at three guineas per pound. Mr. Pepys, of the Admiralty, in his diary, under date, of September 25, 1661, says: "I sent for a cup of tea, a Chinese drink, of which had never drunk before." In 1662, Princess Catherine of Portugal became the bride of Charles II, and being accustomed to the use of tea in her native land, made it a popular beverage in her adopted country. The event was noted by the poet Waller, in a birthday ode to Her Majesty the Queen, in these lines:—

The best of queens and best of herbs we owe
To that bold nation, who the way did shew
To the fair region, where the sun doth rise.
Whose rich productions we so justly prize.

Tea was brought into England from Holland in 1666 by Lord Arlington and Lord Ossory at a cost of 60s per pound. In 1667 the East India Company sent 100 pounds to England. In 1669 the quantity imported into the United Kingdom was 143½ pounds, at an average price of 60s per pound. No further record of imports was made until 1678, when 4,713 pounds were imported at the same declared value. Between 1669 and 1678 the records of the East India Company show imports of small volume in 1670-71 and 1673-74. From 1697 to 1699 an average import of 20,000 pounds was recorded,

* *Authority*: China: official report to Queen Victoria by R. Montgomery Martin, 1847.

the tea being subject to a duty of 5s per pound and 5 per cent on the value, which was 30s per pound. The initial move to make tea an article of direct commerce with China was made in 1680, but a previous shipment from Java in 1668 formed the import of 143½ pounds recorded in 1669, it consisting of two canisters. From that small beginning has arisen a trade that now imports over 200,000,000 pounds annually, and where the consumption is seven pounds per capita.—*American Grocer*, Feb. 26.

## THE ALLIANCE TEA COMPANY OF CEYLON, LIMITED.

### DIRECTORS' REPORT.

The directors have pleasure in submitting the general balance sheet and profit and loss account for the year ending 31st December, 1895, duly audited. The net amount at credit of profit and loss account is £4,250 17s. An interim dividend at the rate of 10 per cent. on the capital was paid on 2nd October, amounting to £1,630 2s 8d. It is proposed to pay a final dividend for the half-year ending 31st December. at the rate of 10 per cent. per annum (making in all 10 per cent. per annum, free of income tax), which will absorb £2,500; and to carry forward to next year a balance of £120 14s 4d.

An amount of £791 1s 9d spent in development of the estates, viz., on new tea clearings, additions to buildings, machinery, &c., has been charged to the profit and loss account, in lieu of writing off an amount for depreciation of machinery and plant for the year, and the directors have, subject to the confirmation of the shareholders, written off the whole amount of preliminary expenses, viz., £1,103 5s 11d to profit and loss account, instead of spreading it over three years, as they were empowered to do by the terms of the prospectus.

The directors, therefore, trust the shareholders will join them in considering the result of the first year's working of the Company to be eminently satisfactory.

The following is the total acreage of tea now in bearing, forest and waste land, and the crops secured in 1895

| | Tea in bearing. | Tea not in bearing. | Forest Waste Grass. | lb. of tea. |
|---|---|---|---|---|
| Aberdeen .. | 387 | — | 93 | 112.372 |
| Calsay .. | 305 | 46 | 36 | 118,495 |
| Luccombe .. | 717 | — | 200 | 221,698 |
| Gleneagles .. | 190 | 25 | 7 | 78,780 |
| Uda Radella.. | 380 | 40 | 135 | 141.547 |
| Thornfield .. | 160 | 15 | 15 | 121,626 |
| Total.. | 2,239 | 126 | 486 | 824,498 |

and the latest reports from the Agents and Managers in Ceylon are of a satisfactory character as regards the condition and yielding powers of the properties, so that, if other conditions continue favourable, the directors anticipate an equally good return for the current year.

The Auditors, Messrs. W. B. Peat & Co., chartered accountants, retire from office, and offer themselves for re-election.

## TEA IN AMERICA AND THE CONTINENT RETURN OF MR. J. H. RENTON.

We extend a hearty welcome to Mr. J. H. Renton, so well-known in commercial circles as a member of the firm of Messrs. Bosanquet & Co., and to Mrs. Renton on their return to the Island. It is almost twelve months to a day since Mr. and Mrs. Renton left the island for home. Seven months out of the twelve have they been travelling in America, Canada and the Continent. Mr. Renton, to some extent has combined business with pleasure, and has been keenly alert in watching the progress Ceylon tea has made in the countries, where most it needs pushing. Speaking to an *Observer* representative he said, "I think the progress made in America is decidedly encouraging, and we have no reason to complain. Still, it will be a very long time before Ceylon or Indian tea holds the market. You can quite understand that big houses in America who have got holdings in Japan and China are not going to give up an article from which they are making money. Still many of the big wholesale houses, speaking of our tea, say, "We have got to carry it as our customers may ask for it, and we have got to have a certain amount of Ceylon tea in hand. It will be a long time before we oust green teas, but as regards black teas we shall knock them out as we have done elsewhere, and we are doing it now. We must try to supply the very best—light flavoury teas—and take to packing in Japanese packages. I mean the oblong packages containing about 60 lb. net. This is very important in a country where the article has to be transported thousands of miles. I am very much pleased with the growing use of tea in Germany. Broken pekoes and orange pekoes are most in demand, in fact all the teas used in Germany are blended. In north and east Germany especially, they drink a lot of it now, and very fair tea they give you. I have lived in Germany, and I am very much struck with the great advance which has been made since 30 years ago." Mr. Renton regrets that he was unable to go to Moscow, as he had intended, but, from inquiries made on the Continent, he learned that much progress had been made and that there is a growing tendency on the part of Russian tea merchants to take pekoe souchong in place of light flavoury teas. It was, he added extremely difficult to gauge the increase of the consumption of Ceylon tea in Russia, as the bulk of it went through Hamburg and Bremen, and was not credited to Russia. In the course of their travels Mr. and Mrs. Renton visited New York, Baltimore, Chicago, Boston, and made a short tour in Canada, their visit to the New World extending over two months. At Mentone, Mr. Renton met his brother Mr. A. V. Renton, who will visit Vichy and other watering place on the Continent, after which he proposes to make a trip to Jamaica, returning to Ceylon about ten months hence. Mr. J. H. Renton was not altogether fortunate in his journeyings, for, when in America where a temperature of 120° was registered one evening at 7 p.m. he had a touch of fever from which, we are glad to say, he has now recovered.

## INDIAN PATENTS.

Applications in respect of the undermentioned inventions have been filed during the week ending 21st March, 1896, under the provisions of Act V of 1888.

For a sun protector for horses.—No 99 of 1896.—Gerald John Campbell Tovey, stamp dealer, of 68, Bentick Street, Calcutta, and Richard Clark, master mariner, of 57, Amherst Street, Calcutta, for a sun protector for horses.

For a cheap and efficient method of making irrigation and other wells in India.—No. 275 of 1890.—Rai Bahadur Ganga Ram's invention for a cheap and efficient method of making irrigation and other wells in India, and which will be designated "Ganga Ram's patent well." (Specification filed 15th December 1890.)—*Indian and Eastern Engineer*, April 4.

## THE DUTY ON TEA.

WASHINGTON (D. C.) "POST."

The importers "call at the wrong shop" when they ask a Republican House of Representatives to tax tea. The policy of that party is to impose protective duties, not duties "for revenue only." We could get $100,000,000 a year out of tea and coffee, which do not compete with our home industries, and let our markets be overrun by foreign manufacturers which do compete with our own labor and capital. This is the English revenue system, and it has a few advocates in this country. It is in high favor with the Mugwumps. But, as we have seen, the Democratic revenue reformers did not venture to tax tea or coffee. Instead of being logical, they preferred to be Populistic, and adopted the income tax,

MILWAUKEE (WIS.) "JOURNAL."

Any duty on tea, coffee and other goods not produced in this country at all, is a revenue tariff, pure and simple. That is, the entire tax goes to the Treasury and none of it to private parties. This is the way free traders would raise revenue—by taking only those things on which there is no competition, which are of general use in all parts of the country. But this demand does not come from free traders, nor is it asked for the revenue it may yield; it comes from the dealers for the purpose of excluding a poor article, even at the cost of higher prices. This is the curiosity of it all. It is expected that the protectionists will oppose any such tax, and there is little show that it will be considered by Congress. But it gives food for thought

CHATTANOOGA (TENN.) "TIMES."

There is no doubt about the fact that we import a good deal of mischief, in the form of cheap, adulterated, verdigris-poisoned teas. But the main point is that we need the revenue that ought to be raised from this ideal article for taxation. It and our coffee imports ought to yield nothing less than $30,000,000 to the Treasury. Add another to the dollar now levied on each barrel of beer, and we get say a round $35,000,000. A total of $65,000,000. This, we say, is the main point; but we need for the protection of the people against fraud and swindling and deleterious trash, a more thorough inspection of teas, coffees, wines, liquors, etc., imported from the other continents. And a stiff duty on all of them will not make the system complete. Inspection of the most rigid kind ought to go with the tax—be a part of the custom system.—*American Grocer*, March 11.

## AMERICAN-MADE CAFFEINE.

Ever since caffeine came into such general use in this country, there has been more or less said about the possibility of its being made here some day. So long as the supply of the sweepings in London was ample for all the requirements of the makers of caffeine in England and Germany, and the price for the alkaloid remained low, it was realized that it could not be made here profitably, even with the protection of twenty-five per cent. ad valorem afforded by the tariff. The question was thoroughly investigated by interested parties here, who decided to wait for a more opportune time. The rapid increase in the demand for caffeine last year, which sent the price up to very high figures, and caused a shortage in the supply of tea sweepings in London, set the statisticians at work once more, and we learn, as a result, that a plant has been established in a nearby New Jersey town, to make caffeine and place it on the New York market. The gentleman who is the moving spirit in the undertaking is a chemist of note, who has had a wide experience in Germany in the manufacture, not only of caffeine, but of all of the finer chemicals used in medicine and the arts. What effect the product of this plant will have on the price depends somewhat on the amount that can be produced. Somewhat over a year ago, when a report was in circulation that caffeine was being made here, we made a thorough investigation with a view to discovering just what quantity of the sweepings could be secured here or contracted for at a price that would permit of the profitable manufacture of caffeine. The result of our investigation was published in our issue of December 3rd, 1894. We ascertained that possibly one hundred tons of Japan tea dust could be secured per annum, at about four cents per pound. Allowing for a yield of two per cent. of caffeine, four thousand pounds of the alkaloid could be obtained, and this amount we now learn is about the amount the new plant will produce. The first cost, therefore, would be two dollars per pound, to which must be added the cost to manufacture, which is comparatively light, as water is used as a menstruum. The market price of caffeine has declined materially since the article above alluded to was published, owing to the use of cheap teas to make up to some extent for the shortage in the supply of sweepings, but even at present prices there is a fair profit in making caffeine here, under the protection of the duty, providing the tea dust is available in the quantity and at the price we have stated. It must not be forgott n that some chemists constantly obtain a greater yield of the alkaloid than others do, and without a doubt the gentleman who is an aspirant for the honor of establishing a new industry in this country of the character indicated is one of this class.

It will be claimed that four thousand pounds is not a great quantity of caffeine to offer, and that it cannot possibly affect the price, all of which is quite true. It may, however, set the other makers guessing, and tempt them to lower their prices, especially if they are assured of an ample supply of cheap raw material. In the light of the past it does not appear likely that the price will be as low as it was in October, 1893, when caffeine sold in this market at two dollars and ten cents per pound, so long as the consumption remains at the present high-rate mark. There is one element in the situation which we have not touched upon, and that is the possibility of the new American maker being considered, at some future time sufficiently formidable to be taken into the English-German combination.

Over a year ago it was understood that caffeine was being made here, but subsequent events revealed the fact that there was no foundation for the claims put forth.

There is some effort being made to have a duty placed on tea, with a view to furnishing the Government considerable revenue. Should its advocates score a success, there is no reason for believing the cost of the tea dust would be increased for the making of caffeine. No doubt an arrangement could be made with the Government similar to that in vogue in London by which the sweepings are denatured.

The outcome of the new undertaking will be watched with much curiosity by those who are interested.—*Oil Paint and Drug Reporter*, Feb. 24.

## THE PLANTING PROSPECTS OF SELANGORE.

Mr. Robert Fraser writes to the local "Times":—With reference to the "Selangore land fiasco"—as it was recently so designated—concerning which so much has appeared in the public prints, and the outcome of which cannot be anything but inimical to the planting interests, and the future development of the coffee enterprise in the several protected native states of the Straits Settlements, I hope you will permit me space for a few lines in defence of that country, which, from experience, and having been engaged in planting there for three years, I can speak of with some degree of confidence.

It is much to be regretted that without thorough perquisition in the first instance, the land acquired by Messrs. Christie and Forsythe should have been taken up by them, as, from what has now transpired, and been given publicity to, intending investors in the Straits will naturally conclude that the bright prospects and inducements held out to

them to take up land for coffee have been overrated, and that the country generally is not adapted to the successful and remunerative cultivation of this product.

It is a great blow to Selangor, Messrs. Christie and Forsythe's opinion and judgment of the unsuitability of the land for coffee cultivation, as it will, for the time being, hold intending investors in check.

Why Selangor should have been chosen by so many investors in preference to the States of Perak and Sungei Ujong, it is difficult to understand,

It has certainly been proved that the estates in the immediate vicinity of Kwala Lumpor, have done exceedingly well, and have yielded large profits to the several proprietors, and that the coffee properties a little further removed, have, one and all of them, also been a great success.

There is no paucity of magnificent land most suitable for the cultivation of Liberian coffee in the State of Selangor, so there is no reason why any investor should choose low-lying and swampy, or "peaty" land in the direction of Klang, while there are so many thousands of acres to be had on the further side of Kwala Lumpor, and in the vicinity of "New Amherst" and other flourishing estates.

There, the land is undulating, affording natural drainage, the soil good, and the forest heavy, while transport cannot be considered a difficulty, with so many roads intersecting the country in all directions, and being within a comparatively short distance from a line of railway.

But on the other hand, Perak, has, I consider, a great deal in its favor for investors intending to open up either Arabian or Liberian coffee, "Waterloo" estate, the property of Sir Graeme Elphinstone, affords ample proof of the success of the former, while equal success with Liberian is evidenced by what "Kamuning" estate (the property of Mr. Hill), about twelve miles from Kwala Kangsar, has done.

When in 1892 I paid a visit to this estate, I was much impressed with the splendid soil, the lay of the land, and the enormous crop trees of from three years old and upwards were bearing. The branches were, without exaggeration, actually borne down with their weight of crop.

The only difficulty and the hindrance there then was labour, although, I believe, this defect has since been remedied by a free influx of Tamil labourers.

There are thousands of acres of very fine land in the Kwala Kangsa district most admirably suited for the successful cultivation of Liberian coffee, which I have myself personally inspected; while on the Blanda Marbok side of Thaiping, I must confess to never having seen land, forest, and soil, to equal it anywhere.

There is no lack of limestone either in the district of Kwala Kangsa, and it is a notable fact, that while the roads between Taiping and Kwala Kangsa are metalled with limestone of the ordinary light description, the roads beyond Kwala Kangsa are all laid with *black* limestone, which latter abounds in the vicinity of "Kamuning" estate.

In the States of Selangor and Perak limestone is to be found in abundance, and should manuring at any time be deemed necessary there are many facilities for making excellent composts.

In both States there are caves where very extensive Bat dung deposits exist—a licence, or permit, and a small fee to Government being all that is necessary to put one in possession of the manure.

The rainfall of Perak is, on an average, about ninety inches, equally distributed. It is a land of sunshine and shower all the year through.

Liberian coffee crops from estates in the protected Native States of the Malay Peninsula.

A circular issued by the Government of Perak in 1891 gives the following particulars:—

| | Cwt. |
|---|---|
| "LINSUAM" estate in Sungei Ujong, average per acre for 4 years in full bearing .. | $9\frac{1}{2}$ |
| "S'LIAM" estate in Sungei Ujong, average per acre for 3 years in full bearing .. | $10\frac{7}{10}$ |
| "WELD'S HILL" estate in Selangor, average for 4 years .. .. .. | $8\frac{7}{10}$ |
| "BATU CAVES," Selangor, one year in full bearing .. .. .. .. | $11\frac{1}{2}$ |

Surely these figures are proof conclusive that coffee is a paying concern in the Straits.

With these few remarks I will meantime end up; but if you will permit me space, I will write to you further on this subject.

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## DR. D. MORRIS ON SISAL FIBRE IN THE BAHAMAS.

After experiencing many disappointments and not a few heavy losses the Bahamas Sisal growers seem at length to be getting rid of their difficulties, and are now fairly started on the high road to making the business a permanent and a lucrative one. As was stated by the Assistant Director of Kew Gardens in his address before the Society of Arts last evening, the industry has had to pass through several very trying experiences, but the ultimate issue is decidedly promising, Dr. Morris has just returned from a visit to the Colony, where he has been investigating the subject at the invitation of the Colonial authorities. It seems clear that the plants were introduced into the Bahama Islands fully half a century ago, and found there a congenial soil, but, strangely enough, no one appears to have taken sufficient interest in them to see that they were of great commercial value if properly looked after. In 1851 Mr. Nesbitt, the then Colonial Secretary, reduced a number of Sisal leaves into fibre, and samples were placed in the Museum at Nassau, New Providence. This, however, did not stimulate anyone to follow up the matter with the object of starting a new business, and the plant, therefore, was for a long time looked upon as a mere curiosity, fit only for hedges. That it is now recognised as a valuable marketable commodity is entirely due to the action taken by Sir Ambrose Shea, the late Governor, in energetically advocating the cultivation of Sisal plants for trade purposes, the industry being started so recently as 1887. But in the short period which has since elapsed the fibre trade has witnessed great fluctuations in prices. When the Bahamas first embarked in business prices were on the rise, the average price per ton in 1879 being £24, and four years later £27, and still going up. Immediately it became evident that the little-known Colony in the south-western corner of the Atlantic was a suitable field for operations there was a rush of capitalists, who, feeling assured of a handsome fortune, spent money recklessly on developing the new trade. Indeed it has been said that under the feverish excitement of the moment at least four times as much money as necessary was invested in the business, and still things looked rosy, for by 1889 the price of fibre, thanks to an American "corner," had gone up to an average of £50 per ton, the highest price attained during that memorable year being £56 10s. Then followed the usual reaction after the interference of "corners;" prices went down with a run, so that in 1894 the average was £17 10s., and last year it was little more than £14. Such a violent change as this was enough to discourage the most enthusiastic of investors, but the lesson has not been without effect. Experience, dearly bought, has taught those directly concerned in the cultivation of Sisal that it can be carried on profitably only by economical methods in farming and in the preparation of the fibre for the market. Notwithstanding the decline in prices, the acreage devoted to Sisal growing is steadily increasing year by year. In 1891 about 4,000 acres had been planted, next year 8,000, in 1893 it was 17,000, and by last year it had risen to 25,000 acres. Notwithstanding this extension of the industry the Mother Country does very little to encourage it, 90 per cent of the produce going to the United States and only 5 per cent coming to England. But this is by no means singular, for it is a curiosity of our trade in fibres that foreign nations supply us with about 90 per cent of the raw material we require. In other words, we pay foreigners £45,000,000 per annum for various fibres, while our own possessions receive only £5,000,000. This is not altogether our own fault. We are certainly to blame for not having officially recommended settlers in our numerous possessions to undertake certain kinds

of farming for which the soils were suitable, and the products of which would be required for home manufactories. On the other hand, the Colonials have been at fault in contenting themselves with practically standing still, troubling themselves about nothing else than growing corn and breeding cattle. There is not a single British possession in the Tropics or in the Temperate Zone that is not suitable for one or more fibre-producing plants. Both Canada and New Zealand can grow some of the finest flax in the world, but it is most difficult to get people to devote a little attention to the matter. It is really absurd to find that while for raw flax alone we pay foreigners more than £1,000,000 annually, our Colonies supply less than £1,500 worth. This is certainly not as it should be, but we must hope that with the improved prospects of the Bahamas other Colonies will take courage, and endeavour to add to their present industries those which will enable them to compete successfully with foreigners in the English markets.—*Morning Post*, March 19.

## THE PINE APPLE.

BY MRS. G. T. DRENNAN, MISS.

This fine tropical fruit neither grows on Pines, nor resembles an apple, therefore the conclusion is that the name is conferred from its resemblance to a Pine-cone, though much larger than any except the cone of the long-leaved Southern Pine.

Of tropical origin, it is only in the extreme Southern limits of Florida and California the fruit can be grown in the open air. But under glass it is frequently brought to perfection by those who delight in the attractive winter garden of the conservatory. We read of flourishing and extensive "Pineries" in England, where hundreds are raised for the tables of the nobility. In our own country, fruit of all kinds finds its natural element somewhere, in one section or another. Extreme artificial culture, such as the English people bestow upon the pine apple, is not necessary here, as exchanges between sections equalizes the supply and demand of all kinds of fruit.

Profitable culture of the Pine Apple for utility, and on a large scale, taxes the skill, ingenuity, and watchful care of the most experienced horticulturists. But for the pleasure of seeing a few specimens grow, as decorative plants in the conservatory of the amateur, not more extra care is required than for tropical plants in general. Experts say 70° or 100° in the day-time, and 70° at night suits the Pine Apple, with strong bottom heat.

The Florida Pine Apple growers, who raise thousands of the very best quality, propagate the plants in two ways: One is from the crown of leaves on the top of each fruit, the other is from the side shoots or suckers, which they freely produce. In either case they are allowed to dry, a few days, before setting them in the soil. This allows the scar to heal, where it is detached from the plant or the fruit, and prevents decay. Like the Cactus, the Pine Apple roots more readily if thus allowed to dry.

If for ornament, plant in a handsome jar or pot, in rich earth, well watered, and set in a warm place, shaded for some time, till well-rooted. The long, serrated leaves, resembling those of the Aloe, are striking in appearance from the first, therefore it is well to select, for planting, the handsomest crown or sucker. Among a dozen Pine Apples there will be some naturally fine in leafage, and others less so. The plant is herbaceous and will put forth new leaves from the centre forming a crown until the second or third year, according to the variety and then the fruit will appear.

Thoresby, the celebrated antiquary of Leeds, who kept a leaf of the Pine Apple in his museum as a curiosity, described the fruit as a "pulpy strobilus, composed of coadunate sections, and crowned with a tuft of serrated leaves." This was in the early part of the eighteenth century, but the pyramidal shape of the fruit, and the "coadunate sections" each with an eye have not changed, although the quality of the favorite varieties of the present day may be finer.

The several varieties are alike, in main characteristics of delicate golden or amber flesh, of exquisite nutty fragrance and indescribably delicacious flavor; but in size and manner of growth there is difference enough to decide some persons in favour of one variety, and some of another. The Ripley Queen of our markets, simply the "Queen" of English growers is perhaps the best for amateurs. Like the exquisite Sugar Loaf it is golden in hue, and very sweet. Porto Rico and the famous Old Jamaica are fine varieties. For cultivating among decorative greenhouse plants the Red Spanish is handsomely colored, and a fine grower. It is the common Pine Apple of commerce, and not so luscious nor sweet as Ripley Queen or Sugar Loaf.

Among decorative plants the Pine Apple never fails to attract attention. The foliage is rather stiff, and never of a bright green. The dull, bluish-green, "saw-tooth," pointed leaves form a crown that is rather peculiar, and not ungraceful. Those who admire the Century-plant will admire the Pine Apple. It has more pliant grace than the Aloe, and is more delicate in structure, however.

If Pine Apple Plants are kept growing steadily they will fruit, that is Ripley Queen and Sugar Loaf, in about 18 months. Two years is ordinarily the time allowed for the common run of varieties. No Pine Apple bears more than one fruit. When the one fruit matures, and is cut, depend upon new plants for more.

From the crown, or suckers, it requires to be kept growing straight ahead. Fluctuating degrees of heat, and inconsistent watering the soil, will tell upon the vigor of the plant. It takes a long time to rally from any kind of a back-set. Like the orange, banana, and other sub-tropical fruits, it is easy enough to cultivate, but resents neglect. Keep it growing steadily, by rich soil, moisture, and heat, and the pine apple will prove an interesting decorative plant, and can be depended upon to perfect fruit.

At exhibitions a pine apple plant with a handsome fruit is sure to have observers around it. Few fruit-bearing sub-tropical plants are so interesting. One thing in its favor is the reasonable size at which it bears. Planted in an ordinary tub it will not exceed one and a half or two feet in circumference, and three feet, or perhaps four, from the base to the tuft of leaves that crown the fruit, in height.

Before closing the plea is entered that a dear lover of this fragrant, refreshing and wholesome Queen of the Tropics, be allowed to call attention to the manner of preparing it for dessert or luncheon: Cut away the tough peeling deep enough to remove the base of the eyes. Then with a silver fork separately dislodge each section, leaving the hard unnutritious core attached to the tuft of leaves on the crown. The core of the Pine Apple is as much to be rejected as the cob of green corn. Sometimes it is sliced through, in circular slices, but as this includes the core, detracts from the luscious, as well as the wholesome, properties that lie in the outer sections. These can be grated or sliced, and it is there the sweetness, the fragrance, the flavor, and the juice, that is like nectar, are all concentred, ripened, and perfected by the alchemy of the sun.—*Mayflower*.

## DRUG REPORT.

(From the *Chemist and Druggist.*)

London, March 19th

OILS (Essential).—Citronella unaltered. At auction 4 drums from Colombo were bought in at 2s 3d per lb., and 3 cases of Winter's brand realised 2¾d per oz. For fine heavy Cinnamon bark oil 4s per oz is asked.

SEEDS (Various).—Annatto-seed has been arriving freely lately, and at auction 75 bags were placed in sale. For fine bright Madras 6¾d was refused, the lot being bought in at 8d per lb. Good bright has sold lately at 5½d per lb.

### THE AMSTERDAM MARKET.

At the Java cinchona auctions, which will be held in Amsterdam on March 26th, 615,770 kilos of Java bark, representing 32,901 kilos of sulphate of quinine, will be offered. The average content of the manufacturing bark is 5·34 per cent.

## THE REPORT OF THE COLOMBO COMMERCIAL COMPANY.

Our London Letter (see page 760) makes reference to the report of the Colombo Commercial Company, Ltd., which we were enabled to publish a short time ago. We have always deemed the annual reports of this Company to demand special attention. One reason for this regarding these documents has been that the Colombo Commercial Company occupied what may be termed an unique position with respect to the leading industries of this Colony. It is both a trading and a planting Association, though perhaps the second function is dependent upon and has sprung out of the first. As the result of the mixed interests in which it engages, it has always been thought wise by the directors to withhold details of the Company's proceedings from the public. Nor are the shareholders taken more into confidence, at least so far as the reports annually presented to them are concerned. It is impossible therefore for us in any degreee to discuss the details of the year's proceedings. We do not raise any objection to the course the directors think it best to pursue. We can readily assent to the view that the very essence of the business transacted necessitates and demands a considerable amount of privacy. The report last published is, of a very exceptional character. Since the previous one was issued a complete change has been made in the constitution of the Company. Indeed that with which we have for so long had acquaintance has altogether ceased to exist, and that which has taken its place has been registered with Articles of Association differing in several important respects from those upon which its predecessor was founded. The report affords us no light as to the reason why this course was resolved upon early in the present year. It has, however, been made known to us that altered conditions of trading in Ceylon rendered the original articles unsuited to present requirements and unduly limited the scope of the Company's operations and the discretion of the directors in dealing with them. Absence of fuller information denies us the power of further remark upon the change now entered upon. It can only be said that this appears to have been made at a time when the business to be transferred was in a thoroughly sound condition, if we may judge as to this by the dividends announced. For many years this long established Company had to contend against serious difficulties, in part due to the transition from the coffee to the tea enterprise and partly to the litigation it became involved in with the "Great Roller Case." That suit terminated recently with a verdict in favour of the Company, and the ground thus became fully cleared for the change that has just been made.

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## THE DELGOLLA ESTATE COMPANY.

Kandy, April 10.

### ANNUAL MEETING.

The annual general meeting of the Delgolla Estate Company was held here today. The report of the directors was adopted.

The meeting was well attended by the shareholders most largely interested, and there were present Messrs. H S Rix, J B Bishop, A Melville White, E S Fox, Gordon Pyper, Frank M Laurie, H A Tipple, J Munton, H J Vollar; Messrs. W H Bailey, Buxton Laurie. and W Forbes Laurie, E S Tench, A E Wright, Deane, Smith being represented.



The report was as follows :—

The Directors submit herewith the Balance Sheet and Profit and Loss Account for the year ending 29th February, 1896, duly audited, and regret that they are not in a position to recommend any dividend being declared. The Directors have still to deplore the prevalence of low prices for cocoa,—with high rates of exchange and a reduced crop.

Cocoa.—The crop gathered was 440¾ cwt., and, though the early appearances justified anticipations of a yield of 700 cwt., which was thought a reasonable estimate for the season, and 155½ cwts. less than previous years, the crop fell short of these expectations by no less than 259¼ cwt. Despite an average rainfall being made up, the season was not propitious. In July and early August rain was very much needed, and though it fell later in abundance with visible improvement to the trees, before the middle of September a serious attack of thrip appeared and acres of cocoa were for a time denuded of leaf. From that time reductions of crop estimates were considered, but only at latter end of the season's gathering was the full shortage realized. Not only thrip caused the loss, but the excess of rain following after the dry weather, had resulted in young pods turning black and falling off.

Liberian Coffee.—38½ cwts. were secured against an estimate of 60 cwts., but as noted in last season's report, the age of trees, condition of shade and old land were not favourable.

Coconuts.—The number of nuts gathered was 99,156 against an estimate of 103,000. A fresh census having been taken shows that very few more trees are actually in bearing than were so last year, but a large number of trees are in blossom now for the first time and fruit not yet set.

Clearings are all progressing favourably as regards Coconuts and Cocoa, but the Liberian Coffee is backward and disappointing.

Cultivated Area.—A statement for information of Shareholders is submitted below.

Prospects for 1896 97.—Estimates of crop and expenditure point to improvement in the coming year.

Directorate.—In accordance with the Articles of Association Mr. E. S. Fox retires from the Directorate, but being eligible offers himself for re-election.

The election of Auditor for the ensuing year rests with the meeting.

By order of the Board.
J. MUNTON,
*Agent & Secretary.*

MEMORANDUM OF CULTIVATED AREA—APPROXIMATE.

| | | |
|---|---|---|
| 309 acres | old cocoa, 25 interspersed with Liberian coffee, and 140 acres with coconuts | |
| 16 | do | cocoa 5½ years old with coconuts |
| 30 | do | cocoa 3 years old with coconuts and Liberian coffee |
| 60 | do | cocoa 2 years old with coconuts and Liberian and coffee |
| 25 | do | coconuts 4 years old with Liberian coffee |
| 102 | do | coconuts 60 acres 6 years and 42 acres 4 years with cocoa planted last year in 60 acres |
| 60 | do | cocoa at Isabel |
| 75 | do | grass and old land |
| 677 acres. | | |

Prior to the adoption of the Report, the Chairman went fully into explanations of the causes of disappointment in the year's results alluded to in the Report, referring to the visitation of "thrip" and the disease which is at the present time forming a fresh feature in the consideration of cacao cultivation though not, on these estates, necessarily of alarm ; and after reference to the hope that the sight of the Delgolla coconuts inspired, when cacao was depressing both in crop and prices, reserved any further remarks until he had an opportunity of replying to any inquiries of the shareholders such as he hoped might be forthcoming.

Mr. A. Melville White inquired about the policy of the Directors regarding the Isabel estate and the

CHAIRMAN expressed his pleasure that the subject should have been introduced by a shareholder, as the Directors had considered the matter and had proposals to make.

Mr. MELVILLE WHITE also sought information in regard to items of annual accounts, management, &c.; and Mr. H. A. TIPPLE in reference to shade trees, manure, &c., elicited expression of opinion and statements of much interest to the shareholders, in which Mr. VOLLAR also gave the benefit of his experience, and Mr. VOLLAR led a discussion as to the coconut, their condition, age, planting, bearing, &c., and referred to the recent census of coconut trees in bearing at Delgolla and spoke generally of the future prospects of this cultivation, which offers to atone in time for the present disappointment in the returns from cacao.

Mr. PYPER proposed the adoption of the Report, and Mr. T. B. BISHOP seconded.

Mr. E. S. FOX was re-elected Director, and Mr. Guthrie auditor.

## TEA FACTORIES IN THE KELANI VALLEY.

Tea factory building in the Kelani Valley has of late been going on vigorously to meet the demands of a district which is steadily developing. A new factory on Wéoya has just been completed. This factory which has almost unlimited water power is entirely driven by that agency. The installation of machinery consists of a "Dessicator" and a large "Paragon" drier with the customary complement of rollers and sifters. The accommodation and power of the factory are equal to turning out from half a million to 600,000 lb. of tea annually. The new factory on Mahaoya completed recently has just got into working order. The machinery in it is driven by water power though a steam engine from the old factory on the top of the hill has been installed as a sort of stand by. When working at full capacity, the factory which "makes" the leaf grown on Walpola and Mahaoya will be capable of turning out quite half a million lb. annually. A new factory has also been started on Ivies estate, near Yatiyantota. The factory is a very compact one. Steam power is employed and the installation of machinery consists of a couple of Jackson's economic rollers, a driver of the "Dessicator" type, a Michie roll breaker and separator and a Michie tea sifter. Important extensions are at present in progress, on Yataderia factory which when completed, will give the premises a capacity for turning out fully three quarters of a million lb. per annum. The additions to the buildings are considerable, and in addition to other machinery we hear that a large turbine has been indented for.

A new tea factory is about to be erected on Sarnia Estate, Badulla. The new factory will also serve Dotlands Estate.

## THE KELANI VALLEY TEA ASSOCIATION, LIMITED.

### REPORT OF THE BOARD OF DIRECTORS.

Incorporated under the Companies Acts, 1862 to 1883.

DIRECTORS:—George W. Paine, Cotswald Lodge, Upper Norwood (Chairman); Donald Andrew, 16, Philpot Lane, E.C.; Leopold F. Davies (Gow, Wilson & Stanton), 13, Rood Lane, E.C.; Dudley A. C. Scott, 45, Eaton Square, S.W.

MANAGING DIRECTOR:—Robert Porter, Midlothian Estate, Ceylon.

BANKERS:—The National Bank of India, Limited, 47, Threadneedle Street, E.C.

SECRETARIES AND OFFICE:—Lyall, Anderson & Co., 16, Philpot Lane, E.C.

The Directors have pleasure in submitting to the shareholders the report and accounts of the Company for the past season.

The total acreage of the Company's Estates remains unaltered, but in addition to the clearings planted last year, which are doing well, about 65 acres of jungle have been felled on Degalessa and will be planted this year.

The total crop secured from the four estates amounted to 597,185 lb., against an estimate of 525,000 lb., and showed an increase compared with that of 1894 of 180,538 lb. of tea.

During Mr. Mitchell's absence on furlough Mr. Tait had charge of Degalessa and Dover, and the thanks of the Directors are due to him and to the Managers of the other estates for their efficient working of the properties.

In consequence also of Mr. Mitchell's absence, considerable additional work was thrown upon Mr. Porter, to whose careful management the shareholders are much indebted.

The factories and machinery continue in efficient order, but the directors have, as on previous occasions, written 10 per cent off their cost for depreciation, and the amount, £678 4s 4d, appears in the accounts.

The mortgage over Wereagalla for £4,000, which fell due on the 31st December last, was paid off on that date, and the directors propose towards meeting this payment that £2,000 of the year's profits be transferred to a special account to be afterwards dealt with.

The Company's net profits for the year, after deducting the sum of £678 4s 4d written off for depreciation, amount to £4,385 11s 1d, which with £579 8s 1d brought forward from last account, leaves £4,964 19s 2d to be now dealt with, and this it is proposed to appropriate as follows:—

| | | |
|---|---|---|
| Amount as above .. .. | | £4,964 19 2 |
| Interim Dividend of 5 per cent paid in September absorbed .. | £813 5 0 | |
| It is now proposed to pay a final dividend of 10 per cent (free of Income Tax), making 15 per cent for the year .. | 1,626 10 0 | |
| To pay bonus of 2½ per cent for the year (also free of Income Tax) ... | 406 12 6 | |
| And to place to special account .. | 2,000 0 0 | |
| | | 4,846 7 6 |
| Leaving a balance to carry forward of | | £118 11 8 |

In accordance with the articles of Association, Mr. D. A. C. Scott retires from the Board, and being eligible offers himself for re-election.

Mr. J. B. Laurie, C.A., also offers himself for re-election as Auditor.

G. W. PAINE, Chairman.

16, Philpot Lane, London, E.C., 25th March 1896.

## THE "IRRIGATION STATES" OF NORTH AMERICA.

The *Century Magazine* for March contains a history of the rise and progress of the "irrigation farms" of the arid belt of North America. The writer, Mr. William Smythe, describes nothing less than a reconstruction of agriculture on a new basis. It is no longer confined to certain valleys of California and Colorado, but has spread over the whole length of the United States, from the Canadian line in Montana to the "staked plains" of Lower Texas, which the waters of the Pecos River are now turning into a garden. In a few years hence a region ten times greater than Lower Egypt, worked by prosperous Anglo-Saxon freeholders, and irrigated by dams, canals, and more commonly by windmills standing on the farms themselves, from the drainage of the Rocky Mountains, will be added to the productive

area of the new world. The new system has restored the prestige of agriculture among the most progressive people in the world. But the discovery has done far more than provide competence and comfort for the new population of the "arid" States. Economically, the system is ideally perfect; socially, it exactly meets the pressing needs of a particular phase of civilisation. It offers an escape to better things to the overgrown town population of the Eastern States, and gives this alternative in a form which pays, which gives permanent homes, progressive incomes, and is of almost unlimited capacity for the reception of the urban overflow. In view of the complete failure of Australia, the prairie area, and the Argentine plains, to attract this population, and of the rapidity with which, in spite of their want of inhabitants, the surplus lands of Canada, the States and the Southern Republics have passed into private ownership, the reason for the "population capacity" of the arid belt of the United States, when irrigated, needs some explaining. The surplus lands of the rest of the New World and Australia present the apparent contradiction of having failed to provide new homes for any great number from the old countries, and yet of being already completely "occupied" in the sense that all paying land is now private property. It is not a contradiction, in fact, because their development has been in precisely the opposite direction to that most to be desired. The system has been precisely that which is most wasteful of land-area and most exclusive of the small settler. In Australia the big squatter "ate up" the little squatter, and then sold his interests to banks and land-companies who joined run to run, and cut down management expenses until the small settlers ceased to exist. On the pampas of the Argentine Republic, the size of the branches has continually tended to expand, while on the corn-growing prairies the size of the farms increases while the cultivation becomes less efficient. Even in the old-fashioned Eastern States of North America, the hard-working New England farmers are increasing the size of their farms, because, by cultivating much land ill, they run less risk of complete failure than by cultivating a small farm well. Here, then, was a hopeless outlook. In Europe and America a town population, dependent mainly on weekly wages, and for these on the chances of commercial success or failure, menaced every year by some great catastrophe such as a general war—a population spending at least 70 per cent of this wage, when in work, on food, clothes, and shelter—were yet debarred from return to agriculture by its economic failure in the old countries, and the monopoly of capitalists in the new ones, a monopoly not maintained selfishly, but due to the fact that on *the existing system*, whether of cattle, sheep, or corn farming, only great areas could be made to pay.

The irrigation farming of the "arid States" has solved this problem for many years to come for the artisans of the United States. It pays, it provides a life not only of competence, but of positive charm, and it is *essentially economical, not only of labour but of area.* Small farming pays best. As the system grows more perfect, the size of the garden-farms decreases, while the produce doubles and trebles. The utmost possible crop is produced by these garden-farms of from five to twenty-five acres. Thus in California a single great estate of four hundred thousand acres has now been split up into thousands of these farms. "The Anglo-Saxon has at last thrown himself into the study of the new methods with as much enthusiasm as he bestows on electricity and new mining processes, and the men who are doing this are being mainly recruited from the millions engaged in the industries of the Eastern States and towns." "The Western labourer is his own employer. He is also his own landlord. These two facts constitute *ideal* independence. But there is, in his case, the *practical* side. From his ten or twenty acres, insured against failure by flood or drought, first by its aridity and second by irrigation, he can systematically produce almost every item of food which his family consumes Western rivers and lakes abound with fish which can be had without cost; salmon are abundant in all the streams which enter the Pacific." Trout are kept in immense numbers and artificially fed in the farmers' pools and dams. "In average years on a twenty-acre farm there is a comfortable surplus. It may be said that the same results are yielded by the agricultural industry elsewhere; but it *cannot be done with equal certainty nor on an equal area* without irrigation." The "water-farmer" has no bad seasons, and the small size of the farm prevents that curse of the Eastern States farmers, the year-long strain of physical overwork. Any analysis of the means by which these results are reached, strengthens the conviction that the elements of the system are sound and permanent. The basis of agricultural depression is, first, the over-production of the staple produces, corn and cattle, and secondly, the fact that they are the production of what is in each country the least-skilled class of labour. The irrigation farmer does not aim at growing corn, or even cattle—except as a dairyman; and his farm is a mechanical manufactory of luxuries, of choice fruits and vegetables for sale with a reserve of grain, cattle and poultry, mainly for household consumption. He thus avoids competition with the peasant corn-producers and the unskilled labour of the rest of the world; in other words, he is above the level of conditions which produce agricultural depression. He raises from three to six crops a year, according to climate and the kind of crop he plants, and by singular good luck or good judgment he has found a fodder-plant specially suited to "intensive" cultivation. This is the alfalfa, a species of lucerne, which will, in the South, produce six crops a year, and is eaten not only by cattle, but by poultry and swine.

The home question at once suggests itself. Are the benefits of this astonishing revival confined by climate to the regions on either side of the "Great Divide," the mountain chains of the United States, or are they applicable in part to the fields of England? The answer must be sought in reference to the area to which the system is now applied in the United States. There it is not limited to the "arid belt." It has spread northwards to latitudes as high as that of the St. Lawrence and the cities of Lower Canada, and has passed the latitude of New York. It has spread from the barren wastes of Lower Texas and New Mexico to the temperate climate of the North, and it is the experience of Montana and Wyoming which will be most eargerly scanned by the farmers of England. Here we shall do well to quote Mr. William Smythe verbatim:—"The evidences of the triumph of irrigation might be multiplied a hundredfold by reference to the story of the valleys of arid America. But there is a wide difference between the agriculture, and especially the horticulture, of the Salt River Valley of Arizona, and the Yellowstone Valley of Montana. The one produces oranges, figs, and pomegranates; the other only the hardiest fruits (English fruits). The same conditions influence the size of the farm and the methods of applying the water, but the fact remains that without irrigation neither Arizona *nor Montana* would have any agriculture worthy of the name, while with irrigation both support farming populations which may be vastly multiplied." In Wyoming the new system has won a most complete triumph over the old. Wyoming lies south of Montana and has an English climate. There was an "organised stock interest" of large cattle-farmers, who resisted the new idea of agriculture almost by armed force. They were beaten. Circumstances were too strong for them, and Wyoming is on its way to become an "irrigation state." "There will be more cattle in the aggregate, but distributed among a multitude of small owners living in the irrigated valleys. There they will raise the diversified products necessary to their support, and great crops of winter fodder (on irrigated fields) for their cattle. This process has begun, and it results in the elevation alike of the men and their industry."

Here, then is the lesson for English agriculture. Watermeadows, irrigated on a primitive plan, are even now worth double the rent of ordinary grass-land. Alfalfa will grow on English soil, and the average duration of sunlight is calculable, though not constant. Each year more land is laid down to grass in a land of rivers and ponds. Millions of pounds have been spent in draining away the stagnant waters which injure the land, yet the knowledge, common to every

West of England farmer, that water passed rapidly over the surface at the proper season gives three grass-crops instead of one, has been used, not in England, but in America. There its proper application is the result mainly of scientific experiment. "It was sought," says Mr. Smythe, "through the medium of agricultural colleges, experimental farms, and neighbourhood associations. We have thus approached, by gradual steps, true scientific methods which are producing results unknown before in any part of the world." Never was in agricultural experiment of such gigantic dimensions so quickly successful. Its geographical limit is not yet reached in the New World, and is clearly indicated as within the scope of English farming. The County Councils of every shire should devote part of their technical education grant to send qualified inspectors to the northern irrigation area, and publish the results of their inquiry for the benefit of English agriculture. —*Spectator*, March 7.

## INDIAN TEA ASSOCIATION.

Abstract of proceedings of a meeting of the General Committee held on the 9th March, 1896:—

Letters of 31st January and 7th and 14th February with their their respective enclosures and accompaniments from the Secretary, Indian Tea Association, London, where brought up for disposal having been previously considered in circulation. The Committee noted what had been done by Mr. Blechynden under the authority of the London Committee in the way of advertising and subsidising in the United States. The letters were ordered to be recorded.

In response to a telegram received from the London Committee £1,800 had been remitted to London on the 5th March. The available balance on account of the American Market Fund left in Calcutta was now reduced to Rs.3,197-12-1.

Considered minute by the Chairman and Mr. Ormiston with reference to their recent interview with the Hon'ble Mr. Woodburn on the question of the appointment of a sc'entific officer to enquire into various matters connected with Tea, on the lines suggested by Mr. Buckingham. The above gentleman stated that Mr. Woodburn was not able to give them a definite idea as to how far Government would assist the Association, but their impression was that Government might probably permit Dr. George Watt to supervise from Calcutta whoever might be appointed and also allow the free use of Government laboratories in Calcutta, but all salaries and travelling expenses would have to be borne by the Association, though it might be possible to obtain a grant for materials and instruments. Under these circumstances it became a question for the Association to consider whether a special fund could be raised for the purpose, as apparently no further progress could be made in the negotiations with Government, unless this were done. It was decided in the first instance to send a copy of the minutes to the Chairman of the Assam Branch for his information, and his opinion was to be asked as to what further steps would be taken in the matter.—*Indian Planters' Gazette*, March 28.

## THE AMERICAN TEA SUPPLY.

The last mail brought us a few figures relating to the American Tea Supply, which are very interesting. The imports during 1894 were 102,083,702 pounds, whereas in 1895 they were 97,883,051 pounds, which shows a decrease of 4,199,651 pounds in spite of the efforts being made to wean the Americans from fancy iced drinks and induce them to transfer their thirsty patronage to the cheering cup. The exports amounted to 768,143 pounds, which leaves a balance for home consumption of 97,114,908 pounds. The bulk of this was supplied by China and Japan, the former contributing about 53 per cent. of the total, the latter slightly over 41 per cent. The remaining 6 per cent. was obtained from the United Kingdom and other countries, a little over 3½ million pounds going from England. In this, doubtless Indian and Ceylon tea predominated, but it is quite evident that a vast amount of headway has yet to be made with British grown teas in the American market, ere the China and Japan supply is lessened. Still a beginning has been made, and the efforts of the Indian Tea Association and its representatives are not likely to be relaxed. As we pointed out in a recent issue the fact that during 1895 the consumption of British grown tea outside the United Kingdom showed an increase of no less than nine million pounds, is in itself, a most significant sign of progress.—*Indian Planters' Gazette*, March 28.

## CHINA TEA.

### EXPORT FROM CHINA TO GREAT BRITAIN.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Canton and Macao .. | 7,416,099 | 7,813,790 |
| Amoy .. .. | 760,842 | 772,692 |
| Foochow .. .. | 11,175,408 | 14,357,248 |
| Shanghai and Hankow .. | 21,111,512 | 21,591,499 |
| | 40,493,861 | 44,535,229 |

### EXPORT FROM CHINA TO UNITED STATES AND CANADA.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Amoy .. .. | 14,665,055 | 19,447,739 |
| Foochow .. .. | 6,066,651 | 4,626,555 |
| Shanghai .. .. | 29,029,320 | 25,796,160 |
| | 49,761,026 | 49,870,454 |

### EXPORT FROM CHINA TO ODESSA.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Hankow and Shanghai .. | 27,240,863 | 22,555,223 |

### EXPORT FROM JAPAN TO UNITED STATES AND CANADA.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Yokohama .. .. | 29,773,503 | 28,686,847 |
| Kobe .. .. | 18,625,900 | 16 726,614 |
| | 48,399,403 | 45,413,461 |

—*Hongkong Weekly Press*, April 1st.

## NOTES FROM OUR LONDON LETTER.

LONDON March 27.

THE COLOMBO COMMERCIAL COMPANY, LTD.

It was recently written you that the issue of the report of the Colombo Commercial Company would be somewhat delayed this year consequent upon the reconstruction determined upon. (We published the report received locally sometime ago). ED. *C.O.* You will see that it mentions that the new company took over the concern as from the 30th September of last year, to which date the balance-sheet presented is made up. The directors announce that the working of the year had been satisfactory, and they pay not only the full interest of 6 per cent on the Preference Shares, but one of like amount on the ordinary shares, both free of income tax. One change made in the mode of drafting the balance-sheet seems to recommend itself for adoption by all companies trading in the East. The transactions due to Exchange are now dealt with in a novel form, all current Rupee Trading Assets and Liabilities appearing in that balance-sheet at their equivalent in sterling calculated at the exchange of the day. We believe that a good many Ceylon companies that publish their reports in London still follow the method now abandoned by the

Commercial Company, with the result that to non-expert readers their accounts may possibly be difficult of full comprehension and estimation.

THE NAHALMA TEA ESTATE CO.

The report of the Nahalma Tea Estate Company, was presented yesterday at the annual general meeting of the shareholders. (We published it a few days ago.—Ed. *C.O.*) An interim dividend of 3 per cent was paid in October last, and a further one of 5 per cent is now proposed, making a total of 8 per cent for the year, free of income tax. Provision is also made for placing £625 to the credit of the Debenture Redemption Fund, while £168 goes towards the expense of a new turbine erected last year. With these two provisions taken into account the dividend would appear a very satisfactory one. Somewhat exceptionally, the tea crop of 1895 exceeded the estimate made of it, the excess being nearly 36,000 lb. The estimate of the present year's crop is 240,000 lb. Testimony is borne by the report to the substantial character of the new turbine erected by Messrs. Walker Sons & Co. of Colombo and Kandy.

A third report sent you by this mail is that of

THE KELANI VALLEY TEA ASSOCIATION,

published on Wednesday last. It proposes to the shareholders a final dividend of 10 per cent (free of income tax). An interim dividend of 5 per cent was paid in September last, so that the total division for the year will amount to 15 per cent. But in addition to this very substantial payment the shareholders are to obtain a bonus of 2½ per cent (also free of income tax), so the profit for the year will be represented by 17½ per cent, a result upon which all interested may well congratulate themselves. That this result could be obtained after setting aside £2,000 of the year's profits towards the clearance of a mortgage on one of the Company's estates, is sufficient to demonstrate the soundness of its financial position, a demonstration the general investing public will not fail to appreciate when considering investment in your tea enterprize. The crop secured is reported to have been largely in excess of the estimate, having been 597,185 lb. as against 525,000 lb. only. The increase as compared with 1894 is 180,538 lb. Further extension of clearing for tea planting is announced.

One of the Indian Tea Companies, the Balijan, has also issued its report this week. It proposes a 5 per cent dividend which added to the interim division of like amount will make a total of 10 per cent for the year.—London *Cor.*

## MARKET FOR TEA SHARES.

Thursday evening, March 26th, 1896.—A strong buying inquiry still characterises the market in Indian tea companies' shares, and again the "official List" shows advances in no less than eight of the quoted shares, while in some cases, notably that of the Assam Company, shares cannot be had even at the higher quotations in the list.

Mincing Lane closes steady to firm for both Indian and Ceylon tea, and most of the former are now printed as "last of the season," so that there can be no more for sale for two or three months, after which the new season's teas arrive.

Fresh Issues.—Nothing except occasional transactions in Dimbula Valley Prefs. at £6.

Quoted Shares.—East India and Ceylon Ordinary were first put up in the official list a fractional point, then put down again, and now close at their previous quotation, without, however, any actual business. The Prefs. have been taken at 13 3-8th, and now ask more money.

Ceylon Shares.—C. T. P. Co. Ordinary are said to have changed hands at an even higher figure than that quoted last week, while the Prefs. are wanted at about 17.—*H. and C. Mail*, March 72.

## THE TEA MARKET.

The Tea market is slightly firmer on the week for British growths, as supplies have not been on a large scale, and for Indian the season is over. China Tea is neglected, for quality is of the poorest, and some rubbish sold down to 1½d. per lb. What is wanted is Tea suitable for home consumption, not the ideal Russian style. New Travancore Teas are arriving, and are of useful description. The late report of Acting Consul Fox, Wenchow, shows that China Tea can be produced to compete successfully with that of India and Ceylon. He states:—Black Tea, costing $14 to $16 per picul (which, at an exchange of 2s 3d the dollar, costs in sterling under 3d per lb.) that Chinese made large profits, an important statement, and of encouragement to those engaged in the trade. From that port were formerly shipped the Sinchiene Kye and Flowery Pekoe, that obtained notoriety as the "Caravan Teas" sent overland via Kiachta to Russia.—*L and C. Express*, Mach 27.

## PLANTING AND PRODUCE.

The United States and the Tea Duty.—The enterprise shown by Indian and Ceylon tea planters in pushing the sale of tea in the United States—of which, by the way, we shall have something to say next week—has perhaps stimulated the movement for increasing the import duty on tea in America. A representative committee of tea importers recently appeared before the Ways and Means Committee at Washington. Mr. Willard, of New York, recommended that a specific duty be imposed upon importations of tea, sufficient to correct certain evils which could not be avoided under present regulations. He pointed out that today the consumer paid the retailer nearly as much per pound for tea as in 1873, but received tea of much inferior quality. A duty would retard the importation of poor tea. Mr. Mead stated that a duty of from 10 to 15 cents per pound would be sufficient. Mr. Charles U. Sheperd said that he had been experimenting with tea-raising in South Carolina for years. Tea could be grown there, but not to compete with the low grades grown abroad. The placing of a duty on tea would make its cultivation in the Southern States probable and profitable.

An Old Story.—The idea of festering the cultivation of tea in the Southern States by imposing a stiff duty on the importation of high grades of tea would naturally commend itself to the American political mind, but the idea of tea cultivation assuming anything like the proportion in the Southern States is not an alarming prospect. Apropos of American tea cultivation, there used to be a story told in Mincing Lane on this subject. It was to the effect that one morning a well-known firm of brokers received a mysterious package, which proved to be two or three pill boxes containing something which, on being looked at through a microscope, turned out to be tea. It had been grown in one of the Southern States of America, and the grower, who had a firm belief in himself, his country, and his tea, had delivered himself on paper of a pious aspiration to the effect that the samples sent contained evidence of tho greatest blessing that the Almighty had ever bestowed upon the American people, and he hoped that Mincing Lane would appreciate the samples. This happened some years ago, and a gross or two of pill boxes would perhaps hold all the American-grown tea now produced. But the American peoplo when they set their minds on an enterprise can accomplish nearly anything, and they may one day conquer the difficulties of the labour question and other matters, and cultivate tea on a large scale. But even then we will hope that they will need a

large proportion of India and Ceylon to give it a flavour. Meantime the work of pushing the sale of these teas go along merrily.

TRY NORWAY AND SWEDEN.—As a scheme is on foot for opening an exhibition at Stockholm on a large scale, an opportunity will be afforded of pushing the sale of Indian and Ceylon teas in Sweden and Norway. The exhibition will comprise engineering, building, industry, machinery, implements, transport, shipbuilding and navigation, electricity, fisheries, military sciences, sport, travelling, fine arts, education and instruction, hygiene reproduction of drawings, etc., slögd, scientific appliances, etc.—*Home and Colonial Mail*, March 27.

## TEA IN AUSTRALIA.

Business in China tea has been rather quiet. Sales are reported of 400 half-chests panyong at 4½d, 300 half-chests panyong, at 6d to 7d, 200 heavy weights choice panyong, 100 quarter-chests buds at 5d, and 370 half-chests kooloo at 5½d to 8d, Ceylons have been in good demand, and sales of about 800 packages (partly for export) have been made at prices ranging from 6d to 1s 1d. A catalogue of 152 packages Ceylon, ex Valetta, was offered at auction on Tuesday, and sales were made, publicly and immediately after the auction, of 130 packages at 5½d to 8d, prices being a shade easier.—*Australasian*, March 28.

## CEYLON TEA IN RUSSIA.

Mr. Philip, Secretary of the Planters' Association, has sent us the following copy of a letter received from Mr. M. Rogivue reporting on his work in Russia :—

Moscow, January 1896.

A Philip Esq., Secretary to the Ceylon Thirty Committee, Kandy (Ceylon.)

Dear Sir.—I now have the pleasure of giving you some amount of what I have done for the advertisement of Ceylon Tea in Russia up to the end of 1895 making use of part of the grant allowed me by the "Thirty Committee" last summer for this purpose.

What I have done is as follows:—

1. The large announcement, examples and translations of which accompany this letter, has appeared four times in each of the six leading daily papers of Russia, size about a quarter page. See example marked A. Novoe Wremya once, also ¼ page in the official Police Gazette. The same has been printed in a somewhat smaller size in eleven provincial papers twice in each, see example marked "B" "Preazovskie Krai" issued at Rostoff on /Don, the ones chosen being those of the largest circulation in their respective Governments.—Cost about R1,500.

2. Besides 1,000 new placards of my firm for Ceylon Tea (specimen herewith) two thousand coloured pictorial transparent placards, one of which with translation of the wording is sent herewith, have been procured for affixing in the windows of my customers and own magazines or elsewhere available, and also in the trams wherever I can obtain permission.—Cost about R2,000.

3. A Calendar for 1896 with a view near Colombo reproduced by photographic process on the one side, and my price list for Ceylon tea and coffee on the reverse.

These to the number of 2,000 were distributed at X'mas and the New year here in Moscow and through my provincial agents.—Cost R150.

4. 3,000 price lists and 50,000 "Brochures" or pamphlets setting forth the advantages and many good qualities of "Ceylon Tea" have been printed and are in process of distribution (example herewith.) —Cost R350.

In hand now I have a smaller newspaper advertisement which is appearing in sixtyone leading periodicals and daily papers, in addition to those of St. Petersburg and Moscow. In each large town of every Government throughout Russia where local newspapers are issued the best have been selected and matters so arranged that every day throughout the year 1896, an advertisement of "Ceylon Tea" shall appear in at least, two papers (of two separate places) and so covering the whole area of this country.—Cost about R3,500.

Further particulars of this advertisement with specimens I will forward with my second report.

I am also getting a *van* with "Ceylon Tea" advertised on the sides to go round Moscow with supplies of my tea for the various shops and customers, and to and from the Railway stations.—Cost R300.

At the Nijni-Novgorod Exhibition (in May next.) I purpose having a *pavilion* for the distribution of Ceylon Tea in cups and in packets as samples etc.—I expect to spend there about R3,000.

As this Exhibition is exclusively for Russian produce and manufactures I am not permitted to exhibit, but believe I can manage by the above method to make good use of the opportunity to spread the knowledge of Ceylon Tea. Of the money granted me I have already spent about R4,000 as shown above in the margin besides extra *discounts*, and liberal *bonues* granted to induce fresh people to take up the business in new places.

My detailed accounts will follow as soon as I have received all the particulars. I will now try to give you some idea of the direct result of what I have done during the past five years as apparent to me here, I am presently able myself to dispose of about 300,000 lb. Ceylon Tea in packets in a year which shows a tremendous advance as compared with the previous year, a large amount of which is no doubt due to the greater freedom of action, I have been able to enjoy through the increase of capital obtained, when I was last in London, Mr. Dowling having as you have heard joined the business; and not only with capital, but also with his thorough knowledge of tea etc., and his personal services be greatly assisted the cause of Ceylon Tea in Russia.

I look for a large increase during 1896 and hope that I shall dispose of nearly half-a-million pounds, but though my customers are numerous they are, as a rule only able to take such small quantities and are at such a distance, that the cost frequently balances or even exceeds the return.

In addition to my own magazines in Moscow, Nijni Novgorod and Warsaw, I have agents in 17 large towns. St. Petersburg, Kiew, Charkow, Rostow, Don, Odessa, Vitno, Minsk, Berditschew, Uman, Jaroslawe, Twen, Witebeck, Orel, Pensa, Gitomir, Michailowka and Tanbow, who in many cases have numerous shops in the small towns of their surrounding districts, and I have regular customers all over the country.

I am now taking steps to open another magazine here in Moscow, making in all five in this city, and also intend about June next to open one in Twanova Vosnesensk, a large manufacturing town, between Leu and Nijni, called the Manchester of Russia.

I have been especially trying to gain customers among the many co-operative societies, railway camp, big manufacturing companies, etc., which exist in the country, and several now have begun to take the Ceylon tea. The army is well represented on my books by several regiments, the "Faculty" by some hospitals, and the "Church" by many priests and a few of the Monas Perico.

To give you some idea of the area which I have worked, I now send tea to Welsk the farthest point North that the railway system at present extends to, and in South Russia in Tiflis and many towns of the Caucasus I have numerous customers, and have just secured another in Askabad which is some way South-east of the Caspian Sea. I have also many clients in Poland and the South West of Russia and in the East, I supply Ceylon tea as far as Kolland and Margalan in Turkistan as well as to several places in Buchara. My agents have nearly all increased their business this last year and here in Moscow the consumption shows good progress. But though I have got the article introduced in so many places, the demand to begin with is so very small and requires such constant working up and the various agents and customers want such liberal terms in the way of discount etc., apart from the substantial *bonuses* and free carriage, I have been giving to encourage buyers of larger quantities and

new connections which alone amounted to about R3,000 this year, that you will easily understand the cost is barely covered, while these small quantities only can be dealt in and the expenses of trading in this country are so heavy.

As to the general import of Ceylon tea into Russia, I must leave the figures which appear in your papers and the custom (of London) returns bear witness as to the general result of my work since 1890 when your article was quite unknown here.

As however a large amount of the tea exported from London to Russia comes through German ports it is impossible to calculate the exact quantity, and at the Customs here Ceylon and China tea are classed together under the one heading of "*Tea.*"

Though I am at most the only one selling any quantity of Ceylon tea pure in packets, the use of it for blending with China tea is generally admitted to be greatly on the increase, and it is noticeable that some more Russian firms have started selling a so-called "Ceylon" blend in addition to their China, showing that a demand for Ceylon tea has been experienced by them.

I am being much annoyed still by some firms who are selling a very inferior article in packets, the wrappers of which are an almost exact facsimile of mine. I hear "Lipton" is opening a shop in St. Petersburg and has already rented premises for the purpose.

I had the pleasure, the other day, of a visit from Mr. Gepp, the well-known broker of Colombo, and should much have liked to show him more of what has been done and given him some further information about Ceylon tea in Russia, but most unfortunately he had no time at his disposal, and in my short conversation with him I was not able to say very much, but I have no doubt you will hear all about it from him. I only wish some of your Ceylon folk *would* come here and see for themselvs what I have done.—I am, dear sir, yours faithfully,

(Sgd.) M. ROGIVUE.

## MR. CHARLES LEDGER AND THE DUTCH GOVERNMENT.

Mr. Chas. Ledger, the cinchona pioneer, now living at Goulburn, N.S.W., writes that he has received the following reply from the Dutch Minister of the Colonies at the Hague, in answer to his request for a further grant on account of his services in procuring from Bolivia, in 1865, seed of the Ledgeriana tree, from which most of the Java cinchonas have been raised:—

The Hague, December 1, 1895.

In answer to your letters February 6, March 20, October 25, 1895, in which you appeal to the generosity of the Government of the Netherlands to receive a reward for your services rendered in view of obtaining the cinchona-seed Mr. George Ledger furnished in 1865, I beg to inform you that the transaction in the matter having been entirely of a commercial character, and duly finished on this side by even repeated liberal payment, I don't feel at liberty to take your appeal into consideration.

The Secretary of the Colonies for the Minister,
The Secretary General,
(Signed) A. E. ELIAS.

We regret the result, but as the planters and traders to whom we appealed on Mr. Ledger's behalf have practically done nothing for him, we are not surprised that the Dutch Government also feel disinclined to assist.—*Chemist and Druggist.*

TEA IN AMERICA.—Messrs. F. C. Larkin & Co., the well known importers of tea in Toronto, have sent us a letter which we publish today. They have done excellent service in advertising Ceylon tea; and at the Colonial Exposition, which is to be opened next month, they are likely to have a good exhibit of our staple product.

## VARIOUS PLANTING NOTES.

NEW MACHINERY.—Most opportunely, notes the Calcutta *Planter*, as the manufacturing season approaches, Mr. Jackson enters the field with an improved rolling machine, which he asserts will still further reduce the time occupied in that operation. Another machine termed a "perforated roller" has been tried with highly satisfactory results in the Durrung district, but until protected by patent rights will not be brought before the public; to comment upon its presumed merits, therefore, would be premature. Another labour-saving apparatus, for sorting green leaf, is to be brought out, which, if effectual, will save both time and labour in the final classification. Many makeshifts have been resorted to for dealing with the coarse leaf unavoidedly brought in, but none have hitherto answered thoroughly, though great expectations are cherished of the present one. The new plucking machine is being manufactured at home, so that it is not likely to come into play much before the middle of the season. The main difficulty, I understand, has been to combine delicacy of touch with ability to withstand jolting over freshly broken up or uneven ground.—*Planting Opinion*, March 28.

THE "CITRONELLA OIL QUESTION" has entered upon another phase. It appears that, in addition to the parcel on which the award was recently given in Mr. Treatt's favour (for there is now no reason to keep back the fact that Mr. R. C. Treatt was the seller, and Messrs. Domeier & Co. the buyers), Messrs. Domeier purchased from the same seller, but through a different broker, yet another lot of citronella oil. This was tendered last week, acceptance declined on the same grounds which led to the refusal of the first parcel. Arbitration was thereupon proposed, but an application (given in the law-notices under the heading "In *re* Treatt and Domeier") was made yesterday before a Judge in Chambers. We understand that the object of the application was to allow Messrs. Domeier to bring the case into court without resorting to arbitration, as provided by the wording of the contract. This application was refused, and the matter is now to be heard in the ordinary way by Mincing Lane arbitrators. It is quite possible that the defeated party will then try to bring the matter before a court of law. —*Chemist and Druggist*, March 21.

COFFEE is the principal article of export from Aden. There are two countries that furnish this coffee—Abyssinia, in Africa, and the province of Yemen, in Arabia. The Abyssinian coffee is brought by camels through Somali Land, and thence by boats to Aden. From the reports the natives bring from that country, it would seem that all the coffee brought from Abyssinia grows wild, yet the berries are as large as, if not larger than, the cultivated coffee of Arabia, and its flavour is excellent. With the soil of that country producing such magnificent coffee without cultivation, one may naturally expect the natives will soon turn their attention to the proper cultivation of the plant, when remarkable results may be expected. The province of Yemen, in Arabia, is the natural home of the coffee plant, as it was there its use was first made; and from that day until the present the coffee of Yemen has been in great demand, for of all the different kinds produced the far-famed Mocha is considered the best. Because of the fact that no travellers are allowed in the interior of the country, no information as to the cultivation of this plant can be obtained, except from the Arab caravans that bring the coffee to market, and these reports are not reliable. But, unlike the Abyssinian coffee, all the Arabian coffee is cultivated. The greater portion of the coffee brought to Aden, according to an official report, is in the pod. The pod is removed by passing the coffee between two revolving stones, thus breaking, or crushing rather, the shells. Women are then employed to clean and sort the coffee, the best of which is exported, the inferior berries and the pods being sold to the Arabs for their own use.—*The Home*, March 14.

Coffee Cultivation in B. E. Africa.—The *British Central Africa Gazette* of Feb. 1st says:—Mr. John Buchanan. c.m.g., has been asked by H. M. Commissioner to forward 60 pounds of seed coffee to H. M. Agent and Consul-General at Zanzibar, for experimental cultivation in British East Africa.

The *Honkong Telegraph* says:—We have received a small parcel of Liberian coffee grown by Mr. Korezki on the Victoria estate, near Kudat, North Borneo. It appears to be of very excellent quality, and is marketable at from $40 to $50 per picul in its raw state. Mr. Korezhi started this estate a few years ago, and it is now in full and regular bearing. He informs us that he will shortly add considerably to the area under coffee at Kudat.—*British North Borneo Herald*, March 16.

The Healthiness of the Wynaad.—This subject is again dealt with editorially in the *Madras Mail*. The article is in reply to criticism by Mr, J. W. Hockin, a planter of Vayitiri, South Wynaad, who seems to have been accusing our contemporary of indulging in personalities. The concluding part of the article is as follows:—We have given it as our opinion that tea can be successfully cultivated in the Wynaad, basing our conviction on what has been done with imported labour in the Dooars and the Terai in Northern India and in the Kelani Valley in Ceylon. We have asked any Wynaad planter who disagreed with us to furnish facts and figures to controvert our statement, but such gentlemen as have written have contented themselves with vague generalities and gross imputations A sufficent acreage is now under tea in the district to prove in three or four years how far we are right; meanwhile we adhere to our expressed belief, supported in it by having recently seen it stated that a planter of South Wynaad, who has been reported to regard malaria as fatal to tea, is now himself interested in the cultivation of the product.

The Future of British Farming.—Professor James Long, lecturing on this subject at the Society o Arts, said that so long as it was possible for every farmer in Canada and the Western States to provide bread for 300 people upon every acre of virgin soil which he adds to the world's great farm, so long would prices remain low and our British systems of agriculture remain at a disadvantage. So we must abandon the idea of grain production in England, but we could continue to provide live stock for meat, milk for our congested population, butter and cheese of the primest quality for the thousands who would continue to pay for it, malting barley for our brewers, poultry and eggs, fruit and vegetab'es for sale at our doors, and even hay and straw where good crops were available. What were the conditions under which these products could be succesfully turned out in the future? First came "intensive agriculture" upon smaller farms. The soil scientifically treated was capable of yielding vastly more than at present. Then the farmer must have security for his improvements, and less restriction on his cropping and sales. Extended ownership in the land by the actual cultivator would also simulate production. Professor Long suggested Government loans at three per cent., with repayments extending over twenty years. Grass land must be improved. Liberality, skilled management, and judicious manuring in grass farming would enable our farms to carry more stock. The arable land must also be improved by scientific methods, and in this connection the lecturer referred with hope to the prospect of utilising atmospheric nitrogen for the improvement of manures, The cost of production migh also be reduced in several ways, and the breeds of dairy cattle be improved. He emphasized the necessity of extending the smaller industries of poultry breeding and fruit and vegetable farming. Personally, he had every faith in the future regarding the present period of tribulation as an "experience of transition." Lord Belhaven and Stenton, who occupied the chair, and other gentlemen took part in a subsequent discussion.—*Daily Chronicle*.

8 Cwts. an Acre.—It has been said that though two or three acres could be made to yield extraordinary average crops by special treatment, on large areas it would be impracticable. The answer of the intensive school has been: try it, and we may point to the example recently cited by the Coorg correspondent of a Madras paper as a case in point The estate is 157 acres in extent, and last year it received about half a ton of artificials per acre, besides cattle, jungle top soil and lime. The result was 8 cwt. per acre of crop, with prospects of a similar crop this year.—*Planting Opinion*, March 28.

Books on Coffee Cultivation.—A correspondent writes:—"One of your correspondent was enquiring I think for a good work on Coffee Planting. The following I have personally read, and I can recommend them: —Graham Anderson's 'Jottings on Coffee,' and 'Shade Trees in the Coffee Lands of Mysore' by the same author. 'Gold, Sport and Coffee Planting' by Robert Elliott, and 'Coffee Planting in Ceylon and Southern India' by Hull. I may remark that in the last author's book the important item of *digging* is strangely lost sight of and omitted altogether. If your correspondent can pick up some old volumes of the 'Tropical Agriculturist,' he will find abundance of valuable information in them on this subject as well as other products."—Ibid.

Leguminous Trees for Manuring Tea.—We would commend to the notice of tea planters the great interest that is now being taken by coffee-men in using leguminous trees as shade. The loppings and leaves, &c., form, it has been claimed with a great show of truth, all that is needed for the plant-food of coffee, thus dispensing with the need of extraneous manures. Tea, of course, cannot be shaded in exactly the same way as coffee, but very little harm would be done if the land was sparsely planted up with leguminous trees. In the tea-districts of Northern India, the merits of *sheshams* and *sa*, both leguminous trees, are freely admitted, the only danger being in the shade growing too dense. Most gardens on these hills suffer both from poor soil and exposure. Were wind belts of suitable leguminous trees—in our last issue we recommended trying "black wattle"—planted systematically over the whole area, the benefit to the tea would be very great. The wood itself could be used as fuel, and the leaves carefully applied as manure. Young tea especially is said to be benefited in Dehra Doon by planting *sheshams* between the rows.—*Planting Opinion*, March 28.

The Proposed Duty on Tea in The United States.—The Washington correspondent of the *American Grocer*, writing on February 25th, says:—The effort to secure the passage of a law levying a duty on tea is meeting with much opposition from the minority of the Ways and Means Committee, while no great enthusiasm is being displayed by the majority members. As I have before pointed out, it is a part of Democratic creed not to invoke the taxing power for any purpose except to derive revenue, and this objection is being used against the filled Cheese bill, as well as the bill to place an import tax on teas. There is an advantage, however, in the situation, so far as the Tea bill is concerned, that it provides a customs duty which would net from ten to fifteen million dollars per annum, and at a time when the condition of the Treasury demands additional revenue. The failure of the Dingley bill, which has been discounted for some time, necessarily improves the prospect for the passage of independent measures, and no proposition yet advanced commends itself to both sides of the House and Senate with as much force as does the tax on tea, regarded from a revenue standpoint. To the Democrats it is acceptable, for the reason that it does not supply protection to any industry; while to the Republicans it is convenient and available, as it does not open up any industrial controversy, which would fill the halls of the Capitol with representatives of less favored enterprises,

## THE PLANTERS' ASSOCIATION OF CEYLON.

### MEETING OF THE "THIRTY COMMITTEE."

Minutes of proceedings of a meeting of the Thirty Committee held at Kandy on Saturday, the 11th April 1896, at half-past 7 o'clock in the morning.

Present:—Messrs. A. W. S. Sackville, Chairman; A. Philip, Secretary; A. Melville White, F. G. A. Lane, A. A. Bowie, H. J. Vollar, James G. Macfarlane, Joseph Fraser, J. N. Campbell, R. A. Galton, R. S. Duff-Tytler, H. V. Masefield, J. H. Starey, Gordon Pyper and W. D. Gibbon.

The notice calling the meeting was read.

The minutes of proceedings of a meeting of the "Thirty Committee" held at Kandy on Wednesday, the 29th January 1896, were submitted for confirmation. Resolved:—"That they be and they hereby are confirmed."

Read letter from the Secretary, Ceylon Chamber of Commerce, Colombo, intimating that the following gentlemen had been appointed to serve on the "Thirty Committee" for the current year, viz.:—Messrs. F. M. Mackwood, F. W. Bois, C. W. Horsfall, F. F. Street, G. F. Traill, D W. Skrine.

Read letters from the Manager, National Bank of India, Limited.

Read letters from the Treasurer of the Colony. Resolved:—"That the request of the Treasurer be complied with." Resolved:—"That the attention of Government be drawn to the circumstance that the amount of the Tea Cess for February and March does not appear to have been paid into the Bank up to date."

Read letter from Government acknowledging receipt of the minutes of proceedings of a meeting of the "Thirty Committee" held at Kandy on the 15th November 1895, and notifying that the copy of minutes of proceedings forwarded on the 18th November had also been received.

#### REPRESENTATIVE IN AMERICA.

Read letter from the then Chairman (Mr. A. Melville White) to Government asking the approval of Government to the expenditure of a further sum of £3,000 sterling by the "Thirty Committee" for the purpose of advertising Ceylon tea in the United States.

Read letter from Government notifying that the Governor has been pleased, with the advice of the Executive Council, to sanction the expenditure of a further sum of £3,000 by the Committee of Thirty for the purpose of advertising Ceylon tea in the United States.

Read letters from Mr. Mackenzie to Mr. White dated respectively London, 17th Januasy; 24th January; 31st January; New York 8th March, 1896.

Read Mr. White's letters to Mr. Mackenzie dated respectively 4th February; 5th February; 11th February.

Read letters from Mr. Mackenzie to the Secretary dated respectively London 31st January; 7th February; 14th February; New York 24th February. Submitted Newspaper cuttings, Advertisements, and other printed matter as received.

Read letter from the Manager, National Bank of India, Limited, Colombo, enclosing Letter of Credit No. 31/10 in favour of Mr. Wm. Mackenzie for £2,000—current till 31st December 1896.

Submitted Cablegrams despatched and received. Resolved:—(1) That the Committee hereby confirms the official and semi-official letters that have passed since last meeting, and also the cablegrams; (2) that the Secretary do obtain from the Bank a fresh letter of credit for £3,000 sterling, and forward same to Mr. Mackenzie; (3) that the Chairman be authorized to obtain the approval of Government to the expenditure of a second sum of £3,000 sterling in the United States of America on the lines laid down in the letter of instructions to Mr. Mackenzie dated 31st May, 1895, already approved by Government; and in accordance with Mr. Mackenzie's letters of the 24th & 31st January, 1896.

Read letter from the Ceylon Association in London.

#### CEYLON TEA AT THE INTERNATIONAL EXHIBITION AT GENEVA.

Read letter to Government from the then Chairman (Mr. A. Melville White) dated 5th February, enclosing extract of a letter from Mr. Mackenzie on the subject of the International Exhibition at Geneva, and asking sanction to an expenditure of £200 sterling by the "Thirty Committee" for the purpose of assisting in pushing Ceylon Tea on the Continent by means of that Exhibition.

Read letter from Government stating that if this application of the proceeds of the levy under Ordinance No. 4 of 1894 is duly desired and determined by the Committee of Thirty, the Governor in Executive Council will be prepared to approve it on a formal vote of the Committee being sent to Government by the Chairman or the Secretary.

Read letters from Messrs. J. Tetley and Co.

Read cablegram.

Read letter from the Secretary the Ceylon Association in London, and enclosure from Messrs. Joseph Tetley & Co. Resolved:—"That the expenditure of £200 sterling as arranged is hereby determined and confirmed by the Thirty Committee for the purpose of pushing Ceylon Tea on the Continent, and that a copy of this Resolution be forwarded to Government as directed.

#### CEYLON TEA AT THE EMPIRE OF INDIA AND CEYLON EXHIBITION, LONDON, 1896.

Read letters from the Secretary, the Ceylon Association in London and enclosures.

Read letters from Mr. E. Ernest Green, making and withdrawing his application for support in conducting a Ceylon Tea House at the Exhibition, the concession desired having been given away to Messrs. Spiers & Pond. Submitted cablegran on the subject.

Read letter from the Secretary, the London Exhibitions, Limited. (For the correspondence see next page.)

#### CEYLON TEA IN RUSSIA.

Read letters from Mr. M. Rogivue giving an account of what he has done for the advertisement of Ceylon Tea in Russia up to the end of 1895, making use of part of the grant allowed by the "Thirty Committee." Resolved:—"That on receipt of detailed accounts of expenditure under the grant of £1,000 Sterling, the "Thirty Committee" will be disposed to favourably consider a further application for funds to be used strictly on the lines already laid down by Government, and that Mr. Rogivue be advised accordingly.

Read letter from Messrs. John Tyndall & Co., London.

#### CEYLON TEA IN SWITZERLAND, AUSTRALIA, AND ITALY.

Read letter from Mr. Charles Oswald, Winterthur, reporting on the transactions in Ceylon since 1889. Resolved:—"That the letter be acknowledged with thanks."

#### CEYLON TEA IN NORWAY.

Read letter from Mr. A. Floor to the Chairman in reference to making known Ceylon Tea in Norway.

Read letter from the Ceylon Tea Company Limited. Resolved:—"That the "Thirty Committee" hereby confirm the Chairman's action in granting and arranging for the shipment of 500 lb. of Ceylon Tea for Free distribution in Norway."

#### CEYLON TEA IN SMYRNA.

Read letter from Mr. G. A. Marinitsch. Resolved:—"That consideration of the application be postponed until next meeting when it is hoped that representatives of the Ceylon Chamber of Commerce may be present."

The Thirty Committee then adjourned.

A. PHILIP,
Secretary to the "Thirty Committee."

## THE EMPIRE OF INDIA AND CEYLON EXHIBITION.

The following is the correspondence on this subject referred to in the minutes of the "Thirty Committee":—

4th Mincing Lane, London, 28th Feb. 1896.

A Philip Esq., Secretary Thirty Committee Kandy, Ceylon.

Dear Sir,—I beg to acknowledge receipt of your telegram of 26 inst. "Please advice Tetley & Co., Mackenzie's application of £200 granted for Geneva Exhibition" I at once advised Messrs. J. Tetley & Co. and I enclose copy of their reply, I also enclose copy of letter from Mr. E. E. Green and of my reply thereto in regard to a proposed Ceylon Tea House at the Empire of India and Ceylon Exhibition 1896 the Earl's Court.

I apprehend that there will be no difficulty in granting moral support to an old planter like Mr. Green. The Indian Tea House conduced last year by Mr. Langdale, with whom Mr. Green is now associated, was a great success on the occasion of my only visit to the Exhibition, the door of the Indian Tea House was besieged by a crowd struggling to get in, myself I had to give it up and go elsewhere.

I have today from Mr. Rogivue a long and interesting report on his doings in Russia, the original of which has I understand has gone to you.—I am, yours faithfully, (Signed).—W. MARTIN LEAKE.

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*Copy.* Customs Chambers, 14th St Dunstan's Hill, London, 27th February 1896.

W. Martin Leake, Esq., 4, Mincing Lane, E.C.

DEAR SIR,—With reference to our interview this afternoon, as I then explained to you we are in treaty with the Exhibition Directors for the conduct of a Ceylon Tea House at the coming Empire of India and Ceylon Exhibition 1896. At present affairs are at a stand-still owing to opposition from the refreshment contractors, Messrs. Spiers & Pond, who wish to run the house on their own account.

The Directors are, however, I believe anxious that the Ceylon Tea House should be conducted by some representative of Ceylon, and on this account are willing to give us the concession on condition that we can obtain the moral support of the Planters' Association of Ceylon. The matter having to be definitely settled at once, there is no time to communicate direct with Ceylon. But we think that a letter from you in our favour would carry great weight with the Directors of the Exhibitions.

I may mention that I am myself a tea planter of 15 years' standing in Ceylon and am a member of the Pundaluoya branch of the Association.

Mr. E. F. Langdale, one of our partners in this concern, as you are doubtless aware, very successfully conducted the Indian Tea House at the last Exhibition.

It seems to us a great pity that the representation of Ceylon should be left to the care of mere refreshment contractors, as we are informed would be the case failing the acceptance of our offer.

You will understand that we ask merely for the moral support of the Association towards the *Tea-house.* But at the same time we should be very glad to arrange and conduct an Exhibition staff of Teas, and other Ceylon Produce if the Planters' Association would vote us some pecuniary assistance for this latter purpose, and send us Exhibits.

With this view I am by this mail writing to the "Committee of Thirty" and I should feel greatly obliged if you would also send them your views on the subject, and kindly ask for a "wire" in reply to our request for support.

With reference to the Tea-house, we are prepared to submit to you for your approval samples of the Tea that we propose to supply to the public.

Kindly address your reply to me as above.—Believe me, dear sir, yours truly,

(Signed) E. ERNEST GREEN.

*Copy.*

The Ceylon Association in London, 4 Mincing Lane E.C. 28th February, 1896.

E. Ernest Green Esq., 14th St. Dunstan Hill, E.C.

DEAR SIR,—I have your letter of yesterday in reference to the proposed Ceylon Tea House at the coming Empire of India and Ceylon Exhibition 1896. I have been for some time desirous of finding some one connected with Ceylon who would undertake this venture; and I shall be very glad to hear that you have obtained the concession of which you write.

As regards, the moral support of the Planters' Association of Ceylon, I have every reason to think that this will be accorded you. I write today to Mr. Philip, the Secretary of the Association, in support of your application to the Thirty Committee.

The fact that you are associated in the venture with Mr. Langdale who so successfully ran the tea House for India at last year's Exhibition, will no doubt have great weight in Ceylon; and as an old tea planter, connected with the Planters' Association for many years, you are in a favourable posisition to obtain support.—I am, dear sir, yours faithfully, (sigd.) WM. MARTIN LEAKE, Secy.

(Copy) 5 and 7 Ferndale House St. London, 26th February 1896.

W. Martin Leake, 4 Mincing Lane E.C.

Dear Sir,—We are in receipt of yours of today's date, informing us that your Association in Ceylon have granted Mr. Mackenzie's application for a subsidy of £200 towards our expenses at the forthcoming Geneva Exhibition.

Will you be so good as to convey to your Association our sincere thanks for this very liberal assistance and our assurances, that we shall use it to the best of our ability in promoting the interests of Ceylon tea.—We are dear sir, yours very faithfully, (Signed). JOSEPH TETLEY & Co.

*Copy.* Bearsted-Maidstone Kent, 28th Feb. 1896.

Alex. Philip Esq, Secretary Planters' Association of Ceylon.

DEAR SIR,—I shall feel greatly obliged if you will bring the following communication before the Planters' Association of Ceylon.

I have today had an interview with Mr. W. Martin Leake in connection with the representation of Ceylon at the forthcoming "Empire of India Exhibition 1896." Mr. Leake is I believe writing to you by this mail on the same subject.

I must inform you that in Association with Mr. E. F. Langdale who so successfully conducts the Indian Tea House at the Exhibition of 1895, and under the auspices of the Indian Planters' Association, I am prepared to carry on a Tea House worked on the same lines in the interest of Ceylon. Having heard that the Planters' Association of Ceylon had not directly moved in the matter and were unwilling to take upon themselves the risk and expense of such a concern, we recently approached the Directors of the Exhibition proposing to conduct a Ceylon Tea House at our *own risk* and expense. This proposal they seem inclined to entertain if it is backed, as we hope it may be by the support and approval of the Ceylon Planters' Association. Otherwise the concession is I believe to be given to the Refreshment contractors Messrs. Spiers & Pond who could scarcely be expected to pay much attention to the interests of Ceylon.

As the time at our disposal was so short we thought it best to apply to Mr. J. L. Shand, who referred us on to Mr. Leake for permission to work under the auspices of the Planters' Association. This Mr. Leake informs us, he is not exactly in a position to give without previous reference to the Parent Association in Ceylon. But he expresses himself as strongly in favour of our scheme, and promised to write you to that effect, and ask for the nominal support of the Association.

As we are greatly pressed for time, we should be greatly obliged if you would telegraph to (Mr. Leake) the assent or dissent of the Planters' Association to our proposals. We have no wish or intention to move in the mattor contrary to the approval of expresed wishes of the Association.

Should we obtain the concession, we propose to select a blend of tea that is likely to meet the public taste and submit samples of the same to Mr. Leake (or some other authorised representative of the Planters' Association) for approval. It is intended that the Tea House should not be identified with any special marks of tea, but should be worked strictly in the general interest of the Ceylon industry, to which end as mentioned above an approved *blend* only will be used.

The Exhibition authorities have set aside a very convenient and suitable site for the Ceylon Tea House (or "Ceylon Bungalow" as it will probably be styled) The plan of the building itself will be decided upon by the Exhibition Architects, but would be erected by us at our expense.

The Tea House (or Bungalow) would be under the personal supervision of Mr. Edward Langdale who has considerable experience in such business, and whose highly successful management of the Indian Tea House last year gave complete satisfaction to the Indian Planters' Association and the Exhibition authorities.

It is proposed to give the bungalow a picturesque appearance by the verandahs and open spaces of ornamental plants commonly found in Ceylon Gardens.

We should at the same time be very glad to arrange and maintain a separate Exhibition stall for Teas and other Ceylon products, if we can obtain pecuniary assistance for the purpose. We estimate the erection and maintenance of such a stall at from £100 to £150, which would include the cost of show boxes, Exhibition bottles, labels and attendant. Mr. Leake suggests an application to the Committee of Thirty for assistance in this matter, should this proposal be favourably considered, we should hope to receive early information to enable us to secure adequate space for the exhibits, and intending exhibitors should be urged to despatch their exhibits without delay. I may mention that we have information, that a suitable site would be allowed us for this purpose upon application. Besides exhibits of produce, we should be glad to receive photographs and artwork, and objects of general interest. Samples of Teas should be of half to one pound each, and should be specially selected for appearance. There would be no tasting of samples, as I believe, no awards are made at this Exhibition. Teas would not be sold at this stall which would be set apart for Exhibition purposes only. All exhibits should be consigned to Messrs. French and Langdale of 14th St. Dunstan's Hill, E.C.—I am, &c.,

(Sgd.) E. Ernest Green.

The Exhibition opens on 1st May.

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*Copy* Bearsted, Maidstone, Kent, 13th March 1896.

A. Philip, Esq., Sec., Planters' Association of Ceylon.

Dear Sir,—With reference to my letter of 28th ultimo, I regret to inform you that the concession for the Ceylon Tea House at the forthcoming "Empire of India and Ceylon Exhibition 1896" has been given away from us (Mr. Langdale and myself) in favour of Messrs. Spiers & Pond, the refreshment contractors.

I therefore beg to withdraw my application for support, nor shall I now be in a position to arrange for an exhibition of Ceylon products.

With apologies for troubling you.—I remain, sir, yours faithfully. (Signed) E. Ernest Green.

*Copy* 4, Mincing Lane, London, 20th March 1896.

A. Philip, Esq., Kandy, Ceylon.

Dear Sir,—I have to thank you for your letter of 26th ult. with copy of letter to Mr. W. Mackenzie.

I also have to acknowledge receipt of your telegram of today "Association supports Green" which I forwarded to Mr. Green.

I fear that it will not now avail to get him the concession which he was seeking. He has, I understand, written to you direct on the subject.—Yours faithfully, (Sgd.) Wm. Martin Leake, Secretary.

(Copy) Kandy, 26th March 1896.

To Martin Leake, Esq., Secretary, Ceylon Association in London, 4, Mincing Lane, London, E.C.

Dear Sir,—I have to acknowledge receipt of your letters of the 31st January and 28th February which shall be duly laid before the "Thirty-Committee."

As regards Mr. Green's proposal in connection with the Empire of India and Ceylon Exhibition 1896. I sent you a cablegram "Association Supports Green." The Chairman of the Planters' Association (Mr. A. W. T. Sackville) in consideration of Mr. Green's claims, and your endorsement of his applications took the responsibility, and he is further prepared to move that the "Thirty-Committee" do grant £100 sterling in aid of the Ceylon Tea House referred to.

I have no doubt that you are in communication with Mr. Green, and I need only add therefore, now that a reply shall be sent to his letter after the Meeting of the Committee in April.—I am, &c.

(Signed) A. Philip,
Secretary, Thirty-Committee.

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## THE BATTALGALLA ESTATE COMPANY, LIMITED.

### SIXTH ANNUAL REPORT.

Directors.—Edward H. Hancock, Charles A. Reiss, Adolf Zimmern. Secretary.—Albin B. Tomkins.

In presenting to the Shareholders their report on the past year's working of the Company, the Directors are pleased to be again able to give a satisfactory account.

There has been an increased yield of tea, and the selling price has been well maintained. The quantity of tea sold in London during the year has been 126,951 lb., realizing nett £4,967 9s 6d., against 117,209 lb., realizing £4,591 5s 11d in 1894. Sales in Colombo amounted to 39,958 lb., realizing R17,904·33, against 25,455 lb., realizing R12,158·57 in 1894.

The total crop was 170,560 lb., selling at 9·97 per lb., against 141,891 lb., selling at 9·35 per lb. in 1894. The average price realized in London has been 10·44 per lb., against 10·50 per lb. in the previous year, and 6·25 per lb. in Colombo, against 5·00 per lb.

Exchange has continued on a low level, the average for Drafts having been 1s. 1 11-16th d., against 1s. 1½d. per Rupee in the preceding year.

The Company's advance to the Oolapane estate has been repaid, and the security discharged.

After deducting 10 per cent., or £366 6s 11d., from the amount at debit of Machinery and Factory Account on 31st December last, payment of Interest on Debentures and income tax for the year, there remains at credit of profit and loss account a balance of £2,393 12s 10. The Directors propose to appropriate from this amount £2,250, for the payment of a dividend of 15 per cent., free of income tax, and to carry forward £143 12s 10d.

In accordance with the Articles of Association, Mr. A. Zimmern retires from the Board by rotation, and, being eligible, offers himself for re-election.

The Directors again desire to express to the Superintendent, Mr. G. C. R. Norman, and to the Agents in Colombo, Messrs. Benham and Bremner, their appreciation of their valuable services.

51, Lime Street, London, E.C., March 21st.

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## PLANTING NEWS.

Balangoda, April 13.

What a change since last I visited this district! Then a scene of desolation scarcely equalled anywhere even during the darkening seventies when I carted away the last European, suffering sadly, from sheer ennui to relieve which he had probably tried too many "horns."

The locality was one of the very first to be tackled by the European planter. So early as 1838 the native coffee attracted attention and Pettiatenne, Pettigalla, Massena, Bamberabotuwa, &c. was the result. Bamberabotuwa was the first to abandon hope. Even Hope well itself ceased within a year to longer "lippen" to providence. The chief causes were the want of shelter belts as a protection from the terrific blow with which the S.-W. opens, and the too liberal rainfall. The wind simply whirled the poor coffee plant round till its neck was injured and there the rain drowned it. There was again a little spurt in the district about 1860 when W. Webster opened Laukabarony on the tableland to the east of the Resthouse. A sort of planting

Gamalliel was Webster, at whose feet the Sinne Dories sat and learned to plant *a la* Saffragam. In those days Keenagaha Ella was opened and Auchintoul attempted, but the locality really never came to much as a coffee district.

Old Pettiagalla was the best, and continued to give paying crops for a quarter of a century, only succumbing to the general collapse.

Today, the scene is changed, and the district has come to be better entitled to its name—"*a good lookout*"—than ever before. Thousands of acres have been carefully planted with a good jat of tea, and now promise exceedingly well. It was fortunate for the present proprietors that they resolved to profit by the sad experience of the pioneers in the matter of wind belts, and also that the time had come when the importance of good jât is fully realized.

Meddekanda estate has made much progress during the past year, nearly 400 acres having been successfully planted on the land where poor Lewis planted a little—and yarned a good deal—30 years ago. Here planting has already begun with the April rains of this year, and I note that on the more exposed portions the plants have been pegged down, a good idea, not so practicable with coffee.

Bamberabotuwa is again a scene of activity, opening out extensively under the energetic supervision of Mr. Ingram; here there is room for 15,000 acres of tea equal to any in the island. Young's excellent trace Ratnapuraward is likely to be adopted after so many years by that rising firm of pushing planters, Finlay Muir & Co., who intend utilizing it for a tramway.

Shades of poor Robt. Dawson! Who could have thought that this district in which he lost a large fortune would yet come to be worth R1,000 per acre? As a few years hence it is doubtless destined to be.

What a perfect tea season we have had all over. Around Kandy there has never been three weeks without copious showers, albeit the heat has been unusually trying at times. Last night (Sunday) we had a delightful drizzle amounting to about ·5 in. which proved very refreshing bringing down the temperature by 3° to 77° during the night. This afternoon it certainly looks as if the little monsoon is approaching.

What *has* come over our old friend McCombie Murray? Surely he must have quite sung away his native *Smeddum*. There has been a great deal of incoherent writing on the subject of this American invasion, but in the language of his mother tongue, this letter of McC. M. "Cows the gowan." QUID NUNC.

## THE COCCIDÆ OF CEYLON.

From Mr. Philip, Secretary of the Planters Association of Ceylon, we have received the following copy of correspondence with Government regarding Mr. Green's proposed Book on the Coccidæ of Ceylon:—

(*Copy*,) Kandy, 26th February, 1896.

To the Hon. the Colonial Secretary, Colombo.

Sir,—I have the honour to submit for favourable consideration, and it is hoped liberal pecuniary support from Government as therein indicated, copy of Minute and Resolutions passed by the Planters' Association at a recent meeting of the Committee on the subject of Mr. E. Ernest Green's Book on scale insects, "The Coccidæ of Ceylon."

As directed in the second resolution I beg to transmit for easy reference a copy (printed) of the correspondence referred to that took place between February and October 1894 regarding the appointment of a Government Entomologist for Ceylon (printed also at pp. cxxvi to cxxxi Book of Proceedings of the Planters' Association of Ceylon for the year ending 17th February 1895) and to point out that Government was then clearly impressed with the importance of the matter, but regretted that no proposals involving additions to establishments could be entertained. In the present case all that is asked from Government is the grant of a subsidy to Mr. Green in aid of the production of the work now being arranged for.

The Planters' Association, it will be observed, is doing what it can, and for the information of Government, I enclose a copy of the printed circular letter addressed to all District Associations inviting their support also in aid of Mr. Green's work.

I further beg to send for perusal under separate cover by post, a copy of Messrs. Dulau & Co.'s Prospectus as received with Mr. Green's letter to the Planters' Association.—I am, sir, your most obedient servant, (Sgd.) A. PHILIP,

Secretary to the Planters' Association of Ceylon

(*Minute and Resolution referred to*)

Scale Insects "The Coccidae of Ceylon" by E. Ernest Green.

Read letter from Mr. E. Ernest Green on the subject of his book above mentioned. Resolved:—I. "That the Planters' Association do subscribe for two copies of Mr. Green's work and that a copy of the letter be sent to the various District Associations strongly urging on them the importance of the work to all planters." II. "That Government be urged to review the correspondence that took place between February and October, 1894, regarding the appointment of a Government Entomologist for Ceylon and to grant a subsidy to Mr. Green in aid of the production of the work now being arranged for."

(*Copy*)

Colonial Secretary's Office, Colombo, 10th March, 1896.

Sir,—I am directed to acknowledge the receipt of your letter of the 26th February, 1896, relative to Mr. Ernest Green's book "The Coccidae of Ceylon" and to state that the matter will receive consideration.—I am, sir, your obedient servant,

(Signed) J. J. THORBURN, for Col. Secretary.

The Secretary, Planters' Association of Ceylon.

(*Copy*) Colonial Secretary's Office,

Colombo, 8th April 1896.

SIR,—Referring to my letter of 10th March 1896, acknowledging receipt of your communication dated 26th February last regarding Mr. E. E. Green's book on "The Coccidæ of Ceylon," I am directed to state that the Government having fully considered the request therein made have resolved to give the same support that the Planters' Association are prepared to give to the work and will therefore subscribe for two copies.

2. As regards the proposal that Mr. Green should be appointed Government Entomologist the Governor has no objection to making a purely honorary appointment on the understanding that if Mr. Green is required to perform any duties in connection with his office, his services should be rewarded by means of fees to be paid by the persons benefited.—I am, sir, your obedient servant, (Sgd.) J. J. THORBURN,

for Colonial Secretary.

The Secretary, Planters' Association of Ceylon,

CASTOR-OIL SHADE.—A correspondent asks elsewhere whether castor-oil would do as a temporary shade until the permanent shade trees have grown up. In poor soil, it is strongly objected to on account of its greedy feeding, but if a rule is made to cut down and *bury* the young trees before they seed, we fail to see how anything but good can come of the proceeding. On rich soil the same objection applies with less force still, and if the trees are cut down *before* they seed and the foliage, etc., buried, only beneficial results should accrue. What a plant takes from the soil it retains in its wood, bark and leaves, and the only direct loss the soil undergoes is when the nitrogenous crop itself is removed. If, however, the castor seeds were allowed to ripen and the oil expressed on the estate, the resultant poonac being religiously restored to the soil, no possible harm could accrue. The oil itself is only another form of carbon, derived from the carbonic acid of the air. As most quick-growers require a large supply of water, it is highly probable that the castor-oil plant is a greedy water-drinker.—Ibid.

## IMMUNIZATION AGAINST SNAKEBITES AND VENOM.

[*Abstract of lecture by Professor T. R. Fraser, F.R.S., before the Royal Institution, March 20th, 1896, reported for "Ceylon Observer" by R.H.F.*]

Snake-bites have become so common in tropical countries whenever snakes have either received an injury or have been expecting one that the "enmity" prophesied in Genesis III, 15, between serpents and the human race, may be said to have been fulfilled. If you meet with a snake and manage only to bruise his head, he will probably turn and bruise thy heel, or any more accessible part of the body.

From the time of Pliny onwards we find remedies suggested for snake-bites. But after studying these I am forced to the conclusion that they are one and all of no effect against poison, but are merely legendary traditions handed down through the ages. Nevertheless from a remote period of time the belief has existed that a power may be acquired by men of handling venomous serpents and then of counteracting their poison; and in more modern times the same belief is found in the writings of natives, especially those of New Guinea. Among the Hottentots they squeeze out the poison of snakes, they kill and drink it saying it is a protection thereafter against that snake. Dr. Cumchbleiger (?) relates an incident in this connection. A certain fakir had been bitten by a serpent, a very poisonous one. News was brought to the Dr. who at once sent remedies. On visiting tho bitten man afterwards he was surprised to find him alive and well, (as he had doubted his remedies would have been in time) He attributed the cure to the remedies he had sent. But he found them untouched, the fakir said he did not believe the snake could harm him. He allowed it to make a second bite; no harm resulted. Then the snake was allowed to bite a fowl; the Dr. took the fowl home and it died in 3 hours.

It may be instructive to associate with this belief the fact that venomous serpents are themselves protected against bites from their own and other species. Venom must somehow have been introduced into their bodies from other serpents. We are convinced that it must have some power of protection caused by the direct result of the absorption of venom into the system. Experiments therefore would be able to prove this.

By a succession of minute doses, animals became able to receive a portion of venom without any injury. For some years I had to relinquish these experiments until I received further consignments of venom from friends in India and some from the India Office. From America I have got venom of a species of a rattlesnake, and also from Australia a considerable number of venoms of different serpents.

The result of the inoculation of toxins as well as protoxins of vegetable substances suggested that toxin of venom might be similarly experimented with.

Sewell and Henty succeeded in proving that certain animals such as pigs and rabbits thus experimented on might safely receive more than the lethal dose is, the minimum amount necessary to kill a small animal.

In 1894 Calmet published evidence containing the results of earlier investigations showing that he had succeeded in safely administering to rabbits about 35 milligrammes each, after 8 or 9 months working with gradually increasing doses.

Here I may mention that hypochloride of eicum is a good antidote to poison.

The venoms that have been used are four, namely those of,—(1) the cobra; (2) the crutilus horridus (?) an American snake; (3) the colubrine serpent from Australia. (4) the Haemacetes from Africa. These were chosen to represent the difference in the venoms of the serpents of the four countries.

The minimum lethal dose for a guinea-pig, a rabbit, a white rabbit and a frog, showed considerable differences. For a frog the dose was ¼ milligrammes; for a cat the somewhat large dose of 5 milligrammes was required, a kitten needed about ⅓ of that amount; while one of the innocuous grass snakes needed the relatively large dose of 6 times that amount. The venom here used was the cobra venom which takes a position among the most active of known substances.

These facts have been used to render animals proof against the lethal dose or even 5 or 6 times that amount. Notwithstanding difficulties rabbits might at last receive as much as 10, 20, 30, or even 50 times the lethal dose, without manifesting any symptoms of injury. But these results were obtained only by the administration of very gradually increasing doses, each succeeding dose rendering the animal more and more capable of receiving poison with safety; eventually the increments not be less gradual so that as much as 50 times the lethal dose would be reached in considerably less than twice the time required for 24 times the lethal dose. That is to say one animal, operated on thus far, might receive enough poison to kill 50 unprotected animals of the same kind and weight in 2 hours; and the highest amount reached in the case of any one animal was 370 times the lethal dose. The time this protection will last has not yet been generally ascertained. A rabbit received 4 times the lethal dose, and 20 days after the same amount failed to produce any toxic effects.

A few experiments were made with animals which had reached a high degree of protection. It was found that safety could be secured by drying the blood serum of animals thus protected using it as an antidote; being 1-10th of the weight of the liquid and retaining its antidotal properties for 8 or 9 months, it was very convenient for storage To it we gave the name *antivenine*. The chief interest in this substance is that it is likely to be used in a few years in the treatment of snake-bites for man.

In dealing with a horse I proceeded very cautiously, giving it at first a great many doses below the lethal dose for 52 days, and after 169 days I found it extremely difficult to go beyond 20 times the lethal dose; but by the use of antivenine I was able to go much higher.

In using the antivenine there are four ways of applying the poison and this antidote by introducing it into the skin:

(1.) When mixed outside the body and then introduced into the skin.

(2.) When introduced in opposite sides of the body.

(3.) When introduced into the same place one after the other.

(4.) When introduced into the same place one after the other with 40 minutes' interval between the poison and the antivenine.

In the first method with the minimum lethal dose it required $\frac{1}{2500}$ part of a cubic centimetre of antivenine—*i.e.* $\frac{1}{150}$ part of a drop, to counteract the effects of the poison But when one comes higher the amount of antivenine has to be more than proportionately increased. Nevertheless the amount still remains wonderfully small, only 3 cc. being necessary to prevent injury from 10 times the lethal dose. By the second and third methods similar results have been obtained. These results are in marked contrast to those obtained when an antidote acts because of its physiological properties suggesting that the change in the system produced by introducing a poison and an antidote is of a chemical rather than a physiological nature. By the fourth method we see the antidotal power of antivenine. ·65 cc. introduced 30 minutes after the lethal dose of venom prevents harm, and after 1½ hours interval 3·2 cc. of antivenine will stop the lethal dose of poison from being fatal *i.e.* ½ an hour before remedy would be too late.

Here again the extraordinary difference in the required quantities of the antivenine and the poison point to a chemical change in the system as the effect of the combination.

To discover the stomachic effects of the poison, it was mixed with milk and rats were given it to drink.

Results:—(1.) We succeeded in discovering that complete immunization against venom could be produced by gradual doses in this way.

(2.) We were able to discover the amount of antivenine to counteract the minimum lethal dose in similar circumstances.

Both these facts showed us again the charge must have been chemical; that it was not a mere tolerance of the body that was produced physiologically. [Here, a portion of the lecture left out.—Reporter.]

Human life might be saved in a considerable if not a large proportion. 20,000 deaths from snake bites occur annually in India, but this does not include the many thousands in the other tropical and sub-tropical regions of the world.

Here is how one of the London dailies reports the lecture:—

SNAKE-BITE AND SAFETY.—At the Royal Institution, Professor T. R. Fraser, F.R.S., who has been conducting investigations for some time past into the question of immunity from the after-effects of snake-bite, gave an address on the subject. The lecturer explained the laborious experiments which have been conducted during the past few years. Briefly, it was found that if animals, such as cats, rabbits, guinea-pigs, and the like, are inoculated by gradually increasing quantities of cobra and other deadly snake poisons, they ultimately acquire a complete immunity. The investigators next set to work to study the effects thus produced upon the blood-serum of the inoculated animals, an ultimately by cultivation in serum of horses a powerful "anti-venine" was obtained, which gave most surprising results when injected into other animals. The effect was to give complete immunity against any fatal effect from snake poison. If cobra venom were previously mixed with the anti-venine in a glass and then injected into an unprotected animal, the toxic effect of the venom entirely failed. But beyond this it was found that if swallowed and taken into the stomach the anti-venine produced the same effects as if it were injected. This pointed strongly to the theory that its action was not so much physiological as chemical. In conclusion, the lecturer remarked that he had discovered in an old number of the *Lancet* a communication from a medical man in South Africa describing the practice of snake venom swallowing followed by the Kaffirs, and stating that these natives appear to be rarely affected by snake-bites.

## THE INDIAN TEA CROP ESTIMATE: AN INCREASE OF 8,800,000 lb.

A special telegram to a local paper states:—The Indian tea crops is estimated at 144,250,000 lb., being 8,800,000 lb. over the actual outturn of 1895. About 128,250,000 lb will be available for export to Great Britain. Since the estimates from the various districts were compiled, severe hailstorms have occurred in Cachar, and excessive drought in Darjeeling, Terai, and Dooars, which may have an appreciable effect on the outturn. The estimate for the crop of 1896 should, therefore be considered a full one.

## BRITISH NORTH BORNEO AND ITS RESOURCES.

### INTERVIEW WITH MR. W. C. COWIE.

BY OUR SPECIAL COMMISSIONER.

When British capitalists take over more than 30,000 square miles of territory from an effete native ruler, and have to be responsible for the good government of the country, they must not expect an immediate return on the capital invested. The shareholders of the British North Borneo Company have waited long and waited patiently, and just as their patience was becoming exhausted a ray of light has appeared on the cloudy horizon which has hung over the State for the last fourteen years. It was in 1877 that the territory was granted in perpetuity to Baron Overbeck, Mr. Dent and their friends, and in conferring upon the British North Borneo Company in 1881 a Royal Charter, Earl Granville, in the course of his despatch, remarked: "The experience of three years shows that the peaceful and intelligent development of the great natural resources of the country is steadily increasing, and there is every reason to believe that a sound and liberale system of administration will be established by the company, which will spread the benefits of civilisation among the native population, and open up new and important fields to British trade and enterprise and to the commerce of all nations." Since that date over a million of money has been sunk in the attempt to develop this huge territory, and the paid-up capital of the British North Borneo Company £500,000—divided into shares stands in the market today at less than £200,000 which is under the amount asked for by the promoters of many an undeveloped Westralian mining enterprise. When one comes to think about it, the whole thing is in the highest degree absurd. But there are brighter times in store for the British North Borneo Company, which, by the way, owes its initiation largely to the enterprise of Sir Alfred Dent, who is today one of the Court of Directors.

With the object of ascertaining some information as to the present position and prospects of this chartered company, I waited the other day upon Mr. William C. Cowie who has been connected with the company from its inception, who is well acquinted with the greater portion of the vast territory, and whose advise as a member of the Board has proved most valuable to his colleagues. He has been 19 years in in the country. He started the first trading stations on the east coast, and it was largely owing to his influence that the concession was granted and the territory peaceably occupied.

The interview took place in the Board room, and Mr. Cowie, in order the more thoroughly to show the huge extent of territory and explain the present developments, had unrolled the large map of British North Borneo, which covers one whole side of the spacious apartment.

"I am very pleased to meet you," he said, and if only City people knew more about the natural resources of this enormous territory the British North Borneo Company would be in a vastly different position to what it is today. However, I am glad to say that we are now making headway. As in the Malay Peninsula, so in British North Borneo, the construction of roads, telegraphs, and railways will prove the salvation of the country. We are now engaged in making all three. We are constructing a telegraph line right away from the west coast to the east coast, and already over 200 miles have been completed. I need hardly tell you that a telegraph line is the pioneer of all exploration work, and that a thorough line of communication will mean the opening up of much valuable land in the interior."

I quite agreed.

"Now," said Mr. Cowie, "I would ask you to follow me on the map in the observations I wish to make, and your readers who are desirous of information regarding the field which British North Borneo presents for the profitable employment of English capital will have no difficulty in following you if they will also consult a map of the the territory of the British North Borneo Company."

"Go ahead."

"Well, on the left you will note, on the north-west coast of the island, Brunei Bay. This is a

safe harbour for vessels at all times of the year, being partially land-locked, and is capable of accommodating not only the whole of Her Majesty's navy, but also nearly the whole of the British mercantile marine. There is no bar at its entrance, and the depth of water is sufficient in almost any portion of the bay for the largest vessel afloat. You will observe that it is practically on the highway of vessels trading between Europe, India, China, and Japan. Its distance from Cochin China is 600 miles, and Hong Kong 1,200 miles."

"Truly a magnificent harbour; and is there coal there?"

"Yes; there are two coal mines, one producing 5,000 tons of coal a month, and the other 3,000 tons."

"Surely you have advised the Admiralty, then, as to the advantages of Brunei Bay as a coaling station for Her Majesty's fleet?"

"Yes; we contend that the Bay, fortified and protected by torpedoes, would make a magnificent harbour of refuge, and with its unlimited coal resources would constitute an unrivalled basis in time of war."

"And what about the railway which I understand you have at last decided to build?"

"Well, the first eight miles of rail were shipped on February 29. We start from Batu Batu, at the entrance of Padas Bay, and work down to Sepitong, thence to Sapong, and eventually right away to Cowie Harbour. The connection of Sepitong with the hills will provide a fitting sanatorium for troops, the distance inland being 52 miles. The proposed line to Sapong will pass through a gorge only 70 feet wide in the central range at an elevation of 550 ft. This gorge being the only practicable pass to the interior from the bay would form an important strategic point in connection with troops stationed in the Pagalan valley—the finest tract of and in North Borneo, and already cleared. In the event of egress by Brunei Bay being cut off by hostile operations the proposed railway would afford an outlet for troops, stores, &c., at Cowie Harbour, which has been described as one of the first in the company's territories."

"Ah, I see they could enter at the northwest and get out by the east."

"Exactly so."

"And when do you expect this railway to Sapong will be completed?"

"In about two years."

"Of course it will open up a vast extent of country."

"Well, we reckon it will help to open up between 3,000 and 4,000 square miles. We have now decided to make the railway without any outside aid at all. The Moss Bay Hematite Steel Works are supplying the material, and it will be what is known as a pioneer railway, with rails 30 lb. to the yard. The material will be shipped as fast as it is required."

"And now with regard to the country which the line will open up. What are the products that will be developed?"

"Well, first of all, there is tobacco. That, I may say, is our principal product. We exported last year over $1,000,000 worth, to Amsterdam principally. There was a shipment sent to London, but the trade simply boycotted it, and it was re-shipped to Holland, where the same people who might have purchased it direct bought it for double the figure. A great deal of our tobacco is transhipped to America. We, ourselves, made between £7,000 and £8,000 worth of cigars last year, about £5,000 of which were sold by a syndicate. This shows what can be done in regard to tobacco.

"And your next most valuable product?"

"Is sago; of which we exported last year 8,744 tons."

"Tons?"

"Yes; it may sound to you a lot, but that was our export of that particular product, which in many tropical colonies is classed amongst the 'minor' products."

"Then you go in largely for coffee, do you not?"

"Well, the area under coffee is increasing, and undoubtedly will increase, but the export at present is not very considerable. The Development Corporation are cultivating 300 acres, and last month they sent out from their estate five tons, and the Taritipan Company expect to pay a dividend in 1897, at which I should not be surprised, for their coffee has realised as much as 98s per cwt. one of the top prices.

"And next to coffee?"

"I should place the jungle produce. Here is a specimen of our cutch. The Bakau Syndicate, located in Glasgow, exported in 1894 $96,350 worth, and no doubt it sold for a good deal more. This cutch is made from the boiling down of the mangrove bark."

"You have splendid timber, I believe—useful for a variety of purposes?"

"Yes, our forests are very extensive. In 1894 we exported timber to the tune of over $71,000, principally to China. The freight has hitherto killed the trade to London. But we are getting many inquiries here for our bilian wood, which is likely to come into competition with Australian hard woods for paying purposes. It is better in every way, and there is no reason why it should not be put upon the market as cheaply, seeing that we some 3,000 miles nearer. When we get the railway built there will be no difficulty in bringing the wood down. Here is a specimen of wood which is used for panelling and decorative purposes, and one firm has promised to take all that we can supply during the next three years."

"And what are your other products?"

"Well, there are what is known as edible birds' nests, so much prized by the Chinese as an article of luxury, beeswax, blachan, camphor, cocoanuts, copra, damar, guttapercha—which will be largely increased when we open up the country—indiarubber, rice—and here I might mention that we have just put on a protective tariff of 10 per cent., hoping to get the natives to grow their own paddy—rattans—the cane of commerce—seed pearls—which the Chinese grind down and swallow—sharks' fins, beche-de-mer, and tortoiseshell. The export of all these will, of course, be largely increased as soon as we get things organised, and especially will there be an increase in timber, as three-fourths of the territory is forest land."

"But I understand the company is now showing some improvement?"

"Yes, undoubtedly, we have turned the corner; but you will understand the improvement better when I tell you that in 1891 we had a deficit of £11,579; in 1892, £7,418; in 1893; £11,057; in 1894, £2,895; whereas 1895 shows an excess of revenue over expenditure for the first time in the history of the company."

"But were there not two small dividends paid a few years ago?"

"Yes; but those were paid out of the proceeds of land sales, not out of any excess of revenue over expenditure."

"Then I gather from you, Mr. Cowie, that there are plenty of openings in British North Borneo for the introduction of British capital?"

"Abundant, and be it remembered that the land regulations are most liberal, the climate is perfect for a tropical country, for we have land available up to an altitude of 10,0.0 ft Large areas of land, similar to those which have produced the tobacco from which the North Borneo State cigars are manufactured, as well as lands suitable for the growth of coffee, sugar, and other tropical products, can be purchased at reasonable rates, but to young men with a capital of £2,000 and upwards the company is prepared to issue a limited number of free grants of 500 acres each for the cultivation of coffee, tea, cinchona, and other products. I may add that the prospects of the Liberian Coffee Eestates now under cultivation are most encouraging."

"And as regards labour?"

"At the present time the native labour is sufficient for all requirements, but we import Chinese from time to time as required. The white population all told numbers 300,30 being in our own employ."

"By the way, I was forgetting one most important question. What about gold?"

"Well, we have found plenty of payable alluvial gold; that the precious metal exists in the stone of the country you will note by the case of specimens on the table, which are from the Darvel Bay district. A syndicate has been formed to locate the reefs, and work the alluvial in the Sabahan River."

"And who is your present Governor?"

"Mr. Beaufort, who has succeeded Mr. Creagh, and I may say that it has been impressed upon him that while maintaining efficiency he must keep down expenses and make the company pay. I may also tell you that the corrected estimates for the present year show a surplus of over $29,082, the revenue being set down at $393,958, and the expenditure, including this office, at $364,876."—*Citizen*, March 21.

## "THE EMPIRE OF INDIA AND CEYLON EXHIBITION 1896."

The circular issued by the directors of the above-named exhibition conclusively demonstrates that although they are denied official co-operation by our authorities they are preparing to include representation of Ceylon in their program for the current year. We can see no possible objection to this being done. It was mentioned in our London Letter that the *Observer* was reported to have written adversely to any participation in this show being taken by the Colony. We most emphatically disclaim any intention of the kind. What we intended to do was merely to point out the necessity for some guarantee that the interests of those who might desire to exhibit should be safeguarded. The publication of the names of gentlemen who will constitute the Committee for Ceylon, we believe, should afford this. Any exhibits that parties in Ceylon should desire to forward will, we are sure, be contributed on the guarantee of these names. While Govenment may not undertake any financial responsibility in connection with the Exhibition we do not see that there is anything to prevent it (as indicated in J. F.'s letter which we published on Saturday) from furthering a Loan Collection illustrative of Native Industries or of lending any buildings available from Chicago; and we re-echo the hope expressed by our senior (who, after enquiries on the spot, is confident that the Exhibition will be a great sucesss and afford a grand advertisement for Ceylon, her products and her industries that H. E. the Governor may yet see his way to promote the Exhibition in the way indicated, and that the Planters' Association and Thirty Committee, will see that a good show of Ceylon teas coffee and cacao is made; while Colombo merchants will forward plumbago, cinnamon oil &c. It is but too well known that gentlemen often lend their names to enterprizes of the nature of this contemplated Exhibition without duly weighing the responsibility they thereby accept, and also that it frequently happens that they consider they have done enough in merely doing this. We are sure however that the Ceylon Committee will take an active and watchful part in the Exposition, feeling that it will be upon the assumption that this active part will be taken by them that exhibitors may be inclined to come forward to assist. We do not doubt the *bona fides* of the management in the least; and we hope to have an encouraging report soon from Mr. E. B. Creasy, the local agent, of the support which the Exhibition is receiving from Ceylon.

## HORTICULTURE IN NEW ENGLAND.*

The evolution of the art of horticulture in New England is naturally contemporaneous with the colonisation of that country by English emigrants in the seventeenth century. The Indian tribes whom our adventurous forefathers succeeded had done but little towards cultivating the lan l, but no sooner had the youngest English settlements been founded, than it became necessary to till the neighbouring country in order to obtain a future supply of food. The Indian women had grown corn in small quantities, clearing the ground with their clam-shell hoes, hiding the produce in *coaches* in the earth from the greedy eyes of what a seventeenth century writer, quoted by Mr. Slade, calls their "gormandising husbands," and the woods and hillsides and valleys produced quantities of wild berries and roots; but the white men, especially those later colonists who came over when the first difficult years had been surmounted, had leisure to remember the fair gardens and stately pleasaunces of their native land, and began at once to make orchards and to plant gardens, and to import trees and seeds from the Old Country to the new England over the sea. There is a love of discovery and adventure in the Anglo-Saxon race to which the history of the early British settlements in North America must especially appeal; what youthful reader need be content with a fictitious Robinson Crusoe or Man Friday when he can state his imagination with the true adventures of the Pilgrim Fathers and their faithful Indian Squanto? The settlers, in spite of many hardships for want of proper food and shelter from tho rigorous New England winters, found themselves before long in a land flowing with milk and honey, the shores of Massachusetts Bay and the adjoining country yielded abundant crops when cultivated and manured, Indian fashion, with fish; and fruits and vegetables, native and imported, grew as well or even better than in the Old Country. There are many references to the planting of orchards and fruit-trees in early New England records, but Mr. Slade says (p. 112) that "few records exist of the horticultural progress during the succeeding one hundred years," and a paper written by the Hon. Paul Dudley in 1726 speaks of the cultivation of fruit and vegetables in Roxbury, but makes no mention of flowers. Boston always seems to have been celebrated for its gardens. Wood writes about 1633: —"This Towne [Boston], although it be neither the greatest nor the richest, yet it is tho most noted and frequented, being the Center of the Plantations where tho monthly Courts are kept. Here likewise dwells the

* *The Evolution of Horticulture in New England.* By Daniel Denison Slade. London: G. P. Putnam's Son

Governour. This place hath very good land, affording rich corne-fields, and fruitefull gardens: having likewise sweet and pleasant springs." The references to these old gardens are provokingly slight and unsatisfying. We would rather have had one clear presentment of an old-world garden revived for us than all Mr. Slade's careful and precise *catalogue raisonne* of the early residents in and around Boston, who were celebrated for their "places,"—

> "And as imagination bodies forth
> The form of things unknown, the poet's pen
> Turns them to shapes, and gives to airy nothing
> A local habitation and a name,"—

but Mr. Slade is not only the reverse of poetical or imaginative, his literary method is confused and rambling, and his style awkward and common-place, as the following passage will show:—

> The gardens of Boston, in the fullest acceptation of the term, combining the useful and ornamental, the orchard, the vegetable and flowering plants (*sic*), were found in the first half of the eighteenth century, mostly attached to the residences of the more wealthy citizens. References are occasionally and briefly made by writers to a few which existed many years previously. Thus the house of Governor Winthrop, which stood nearly opposite the foot of School Street, was with the garden attached called 'The Green.' We obtain a mere glimpse of the disposition and size of the garden from any accounts extant."

Even of the "most extensive and highly embellished" garden belonging to Gardiner Greene, where was seen one of the first greenhouses in Boston, Mr. Slade only says, "The entire grounds were adorned by both nature and art."

It was after the Revolution that the New Englanders had once more leisure to cultivate their gardens, and in 1801 a Botanic Gardon was established in Cambridge, and a professor of botany appointed at Harvard College. Improvements in gardening and the cultivation of plants were also greatly fostered by the formation of horticultural societies, as they had been in England by the efforts of the Royal Horticultural Society and its frequent exhibitions. We cannot follow Mr. Slade into his disquisition on the three forms of modern landscape gardening, which he defines as the Gardenesque, the Picturesque, and the Formal or Geometrical. We would rather say with Addison:—"I think there are as many kinds of Gardening as of Poetry: your makers of Parterres and Flower-Gardens are Epigrammatists and Sonneteers in this Art; contrivers of Bowers and Grottos, Treillages and Cascades, are Romance writers. Wise and London are our heroick Poets. . . . . . As to myself, you will find by the account which I have already given you, that my Compositions in Gardening are altogether after the *Pindarick* manner, and run into the beautiful wildness of Nature, without affecting the nicer Elegancies of Art." He had already said that he was looked on as "an Humourist in Gardening," and we can imagine the delightful surprises and unexpected vistas that might be expected from such a character. We fear that Dickens would have immortalised in *Martin Chuzzlewit*, had he seen it, the extracts from an address read before the Massachusetts Horticultural Society on suggestions for the ornamentation of burial-grounds, given by Mr. Slade, with all due seriousness, on p. 144, where we read that—

> "The skill and taste of the architect should be exerted in the construction of the requisite departments and avenues; and appropriate trees and plants should decorate its borders; the weeping-willow, waving its graceful drapery over the monumental marble, and the sombre foliage of the cypress should shade it; and the undying daisy should mingle its bright and glowing tints with the native laurel of our forests."

Even a "Humourist in Gardening" could hardly imagine the "wee, modest, crimson-tipped flower" mingling its "bright and glowing tints" with those of the native laurel of any forest; but we heartily concur in the sentiment conveyed by the author of this flight of imagination, that churchyards and cemeries may become pages in the book of daily life decorated with flowers and tender memories, instead of bare records of our dead, into whose arid and deserted ways we could not look without a feeling of desolation. The planting of trees as memorials of a family or in commemoration of some event are the most abiding links between one generation and another. Surely nothing could better recall our common ancestry to the New Englander of this century than the contemplation of trees planted by the early settlers, such as the apple-tree "planted by Peregrine White, the first child of the Pilgrims, at Marshfield, in 1648; the pear-tree imported by Governor Prince in 1640, from England, and planted on his estate at Eastham; another pear-tree in Yarmouth set out by Anthony Thacher in 1640, and which was bearing fruit in 1872." The most indifferent and the most quarrelsome of men will bury their differences over the growing of roses and lilies, and the verdict on the white rose on the red rose side need not necessarily lead to civil war. Flowers are civilisers and hereditary peacemakers, and a great nation like the United States does well to assist at the spreading of knowledge on such a subject. The New Englanders may honestly be proud of their improvements in horticulture during the last century as recounted by Mr. Slade; at the same time we could have wished the noble art a more interesting, though possibly not a more painstaking, exponent than the author of the volume in question.—*Spectator*, March 21.

## INDIAN PATENTS.

Applications in respect of the undermentioned inventions have been filed during the week ending 28th March 1896, under the provisions of Act V of 1888.

For Improvements in or connected with Machinery or Apparatus for Drying Tea Leaf or the like.—No 108 of 1896.—William Jackson, engineer, of Thorngrove, Mannofield, Aberdeen, North Britain, for improvements in or connected with machinery or apparatus for drying tea leaf or the like.

For Improvements in Bicycles.—No. 112 of 1896.—Albert Sheldon Weaver, piano manufacturer, of the city of Hamilton, in the county of Wentworth, and the province of Ontario, Canada, and William Jefferson Goold, Clerk, of the city of Toronto, in the county of York, and said province of Ontario, for improvements in bicycles.

For Drying and Warming all Sorts of Oil-seeds by Steam Power.—No. 118 of 1896.—Temulji Dhunjibhoi, mill manager, now residing at No. 125, Hurrogunge Road Salkia, Howrah, for drying and warming all sorts of oil-seeds, by steam power.

For Clearing and Separating Cells of Seeds, by Steam Power or Manual Labour.—No. 119 of 1896.—Temulji Dhunjibhoi, mill manager, now residing at No. 125, Hurrogunge Road, Salkia, Howrah, for cleaning and separating cells of seeds, by steam power or manual labour.

Specifications of the undermentioned inventions have been filed under the provisions of Act V of 1888.

For Improvements in Apparatus for Rolling Tea Leaf and the like.—No. 38 of 1896.—William Jackson, engineer, of Thorngrove, Maunofield, Aberdeen, North Britain, for improvements in apparatus for rolling tea leaf and the like. (Filed 23rd March 1895.)—*The Inian and Eastern Engineer*, April 11.

THE KEW BULLETIN FOR FEBRUARY CONTAINS:—Cold Storage of Fruit; Decades Kewenses: XXVI.—XXVII; Dominica; New Orchids: 16; Two African Holarrhenas; Natural Sugar in Tobacco. Miscellaneous Notes.—Botanical Magazine.—Hooker's Icones Plantarum.—Hand-list of Orchids.—Water Supply.—The British Honduras Pine.—Beetle Larvæ attacking Orchids.—Solanum torvum in Assam.

## PLANTING AND PRODUCE.

TEA IN THE CAUCASUS.—The Russian Government is about to put into practice the knowledge acquired about tea some months ago, when it sent a scientific expedition to China and Japan to study the national tea industry. This expedition has now returned with a numerous staff of Chinese and Japanese workmen, who are to initiate the Russians in all secrets connected with the growing and handling of tea. The expedition has also arranged for importing a large number of young tea-plants into Russia, and there is talk about making the Caucasian tea industry felt on the European markets.

TEA CIGARETTES.—The description given in an American paper of the effects on the smoker of a tea cigarette is not enticing. You first make your cigarette, then you smoke it and await the result. The process of making the cigarette is comparatively simple—the effect is distinctly complex. Tea leaves are dampened enough to make them uncurl, and then are rolled in paper. The first cigarette produces a feeling of dizziness, and is sufficiently nasty to, as a rule, choke off the beginner. But with perseverance the feeling of dizziness passes off, and is succeeded by intense exhilaration, which lasts as long as the cigarette. Then comes the penalty. According to the American authority mentioned, the reaction is said to be agony, for the smoke of the tea is inhaled into the lungs, and is succeeded by a horrible nausea. Food then becomes absolutely distasteful, and a cup of tea is the first thing that can be taken. Shortly after all the disagreeable effects have passed off, there comes a craving for another cigarette, which is generally surrendered to, and so the round goes on. This smoking is utterly ruinous to the nerves, and someone with a passion for statistics has calculated that twenty tea cigarettes a day equal to forty cups of tea as regards quantity, or to two hundred as regards strength.—*H. and C. Mail*, April 3.

## MARKET FOR TEA SHARES.

Thursday Evening, April 2, 1896.

The approach of the Easter vacation has tended in some measure to narrow the volume of transactions in tea companies' shares, but notwithstanding this there has been a fair business in progress, and the market stocks closed with no weakening whatever in quotations.

Mincing Lane also closed firm and looks like renewed advances after Easter. "Last of the season" invoices continue to appear in the catalogues which foretell an early finish of the Indian sales, while Ceylons also seem to be in rather diminished quantities.

Fresh Issues.—There is nothing further in Dimbula Valley Pref. nor in the Ordinary.

Quoted Shares.—East Indian and Ceylon Ordinary have been marked up in the official list, where they now close 10½ to 11½; but there are sellers at a shade over 11. The Prefs. have been done at prices varying from 13½ to 13⅝ or thereabouts.

## UNION ESTATES CO. OF CEYLON, LD.

At the first annual ordinary general meeting of the United Estates Co. of Ceylon, Ld., held on the 18th April, the report and accounts, as published, were adopted, and a dividend of 5 per cent for 1895 was declared. There were present Messrs. C. Young (in the Chair), G. W. Carlyon, G. H. Alston, W. D. Gibbon, Directors; Messrs. J. Wilson, A. Thomson, H. Tarrant, E. S. Anderson, W. Moir, C. A. Leechman, W. H. Figg; Mr. G. Walker, Major G. L. Gwatkin, Messrs. A Deane and S. E. Teneh (by their Attorney Mr. W. D. Gibbon), and Mr. J. MacLiesh (by his proxy Mr. E. S. Anderson.) It was mentioned at the meeting that in this week's *Government Gazette* a notice appeared assessing the estates in the district for the extension of the Deniyaya road 5 miles in the direction of Hayes estate.

### THE REPORT

is as follows:—

ACREAGE.

| | Tea in full bearing. | Tea in partial bearing. | Tea not in bearing. | Cocoa in bearing. | Cocoa not in bearing. | Total Cultivated. | Grass Jungle & Waste land. | Total. |
|---|---|---|---|---|---|---|---|---|
| Hayes | 405 | 11 | — | — | — | 416 | 790 | 1206 |
| Gongalla | 90 | 12 | — | — | — | 102 | 471 | 573 |
| Dea Ella | 111 | 78 | 50 | 31 | 39 | 309 | 177 | 486 |
| | 606 | 101 | 50 | 31 | 39 | 827 | 1438 | 2265 |

(On Dea Ella 260 acres of tea are interspersed with coconuts planted 30' × 30'.)

The Directors have pleasure in submitting to the Shareholders the Accounts of the Company for the past year.

Since the Company was formed the Directors have purchased, in addition to Hayes and Dea Ella (which cost R280,000), Gongalla Estate, as from the 1st June for the sum of £800 (R14,524·84), as well as acres 12 3·32 of land adjoining Hayes for the sum of R288·50. These latter purchases now form part of Hayes Estate.

The crops secured last year and the net average prices realized were as follows, viz:—

| | | | |
|---|---|---|---|
| From Hayes | 168,600 lb. tea | average cts. 41¾ | per lb. |
| Gongalla (7 months) | 10,660 „ „ | „ 41¾ | „ |
| Dea Ella | 67,965 „ „ | „ 39¾ | „ |
| „ | 44 cwt. cocoa „ | R30 per cwt. | |
| „ | 3,320 coconuts „ | „ 30 per mille | |

whilst the sum of R6,020·47 was obtained on Hayes by receipts for manufacturing tea for other Estates.

The prices realized for a large portion of the Hayes crop were disappointing, owing in a great measure to loss of market in consequence of the very defective means of transport from the estate which necessitated the teas being stored there for long periods and brought the bulk of the crop for sale when prices ruled low. The question of improving the outlet from the estate to the main cart road, a distance of 11 miles, has engaged the earnest attention of the Directors, and Government has already sanctioned the construction of a cart road on the grant-in-aid system for one-half the distance, whilst improvements to the remaining 5½ miles are being made on estate account. Application to Government has also been made for the construction of an outlet road (about 4 miles in length) for Dea Ella estate.

Excluding the cost of forming the Company the profit realized was equal to 9½ per cent per annum for the 7½ months since the capital was called up. The net profit available for Dividend, after writing off interest to Vendors all all charges incidental to the formation of the Company and making ample provision for depreciation of Buildings and Machinery amounted to R17,276·69, or 5·40 per cent on the paid up capital, and the Directors now recommend the payment of a Dividend of 5 per cent for the period under review.

A balance of R1,276·69 will then remain to be carried forward to the current year's accounts.

The estimates for the current year are 265,000 lb. Tea and 60 cwts. Cocoa on an expenditure of R87,065, which sum includes the cost of manufacturing tea for another estate in the Hayes factory and upkeep of young products on Dea Ella.

The capital account expenditure on Hayes Estate is estimated at R11,500 for a clearing of 12 acres tea, extensions to buildings and additions to machinery. The contribution payable by Hayes for the cost of the road above referred to has not yet been assessed.

In terms of the Articles of Association all the Directors now retire, but are eligible for re-election.

## Correspondence.

*To the Editor.*

### TEA IN AMERICA.

THE BRITISH ASSOCIATION MEETING ; THE PROPOSED COLONIAL EXPOSITION.

Toronto. March 5.

DEAR SIR,—We read with much interest the letter of " T. A. C." in your issue of Jan. 23rd, and as we are greatly interested in any advertisement that Ceylon teas can have in Canada, we take the liberty of correcting him as to the place in which the British Association will meet, which will be at Toronto, Canada, not at Montreal.

" T. A. C." also seems to be under the impression that the proposed Colonial exposition is to take place next year, but this is to take place this year, commencing in May next, and as soon as we are satisfied that this proposed exhibition, which is under " private auspices," will be a success, we will make arrangements to have a good Ceylon tea exhibit there.

We have been in communication with Mr. William Mackenzie about this for the last six months, and you can depend upon it that if this exhibition takes place, and is at all likely to be a success, an exhibit will be made worthy of the sland.—Yours truly, P. C. LARKIN & CO.

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### NEWS FROM MR. McCOMBIE MURRAY.

200 W. 41st St. New York, March 11.

DEAR SIR,—I am ashamed to refer to the date of the last kindly letter addressed to me by you. To save humiliation and space in explanation I will ask you to let " that flea stick to the wa." You requested me to write from America. Let me *now* do so, and let bygones be bygones. I shall endeavour to interest you and your readers, and, if successful, I am at your command in the future.

My ten years, absence from Ceylon must necessarily present me to the planting community as a comparative stranger, particularly as I have ceased to act as an adviser and prophet. I remember well my last letter written at the time of the formation of the first Company represented by Mr. R E. Pineo—and the notification of my retirement as correspondent therein contained. Once again I, wrote regarding Mr. Elwood May, and since then I have been content to look on—but I doubt if anyone has reviewed with keener *latent* interest the evolution of *theory*, born of Ceylon, into results as a practical American Campaign. You must know of course somewhat of my own experience from beginning to end, how that I fought my own battles in Philadelphia from date of arrival till the end of 1889, when I ceased to exist as a Firm and that for another year I tried to work out my own salvation at a desk in Shannon's Old Tea Store (now V. R. Harkness) in Philadelphia. What I went through in experience and money is a matter of past personal history, which did not appear at the time to interest Ceylon planters very much, and certainly cannot benefit them in any way now. They have so many able writers and talkers to express like experiences in later years who are even now in their midst that I may be considered a back number.

One fact however remains to me as a solace when I look back upon the past.

I can read every letter I wrote, which appeared in your columns from the time I first advocated a Ceylon Tea Syndicate, before leaving Ceylon, to the date of my last writing, without withdrawing one single expression of my views as they are now. Not that I would not do so willingly, and without feeling ashamed of error in judgment, for I would be excused—but I have no reason to alter my opinions as expressed in the past, and therefore refer to all *past* arguments as applicable to the introduction of Ceylon Tea in the United States today.

To return to the date of my retirement from the Ceylon Tea business, say 1891, I, as you probably are aware, gave my attention to music as a profession, and studied " the Voice" as a specialty. I was comparatively successful, and have some reputation as an authority on the subject. As you have in your community a percentage of musicians, I will take pleasure in sending you such matter as will shew how the march of science is clearing jungles of mystery which have obstructed the light of understanding in the art of voice production.

I can do so with the assurance that I am "up to date" in my information, as I am in constant attendance at the Columbia College, New York, where scientific investigation is now being carried on by a newly discovered process which is attracting the universal attention of vocalists and prominent teachers in the profession.

When I say I have the public criticisms &c. handed to me for answer by the authorities at the College, you will be more likely to rely upon my writing, all of which passes through their hands before publication.

Until September 1st 1895, I remained in Philadelphia. I think I sent you copies of my professional circulars with cuts of my choir—in itself an innovation, as having vested girls instead of boys as choristers. Even in this, I had my battles to fight. The idea was discountenanced as " unchurchly," " unscriptural"—by some—" High Church" and " Ritualistic" by others who were of Low Church persuasion. By winning over the authorities, however, a trial service was granted, and being well prepared, the music was not only acceptable, but the appearance of the innocent little girls in their vestments banished prejudice in all but those who " would not have it, or would leave the Church."

They *did* so—for the choir was unanimously adopted (with but one dissentient) within 20 minutes of the dismissal of the congregation which was the largest ever gathered together in the Church since its erection.

Others followed, and now I presume at least half the Episcopal Churches in Philadelphia, and many in New York and other large cities, are supporting mixed vested choirs.

To leave this choir, the result of my personal training of, principally, Sunday school children of whom six are now receiving good salaries, nearly broke my heart, but after five years' service I made up my mind to make a change, and, by coming to New York, look out for a larger and unlimited field for the creation of a greater choir, built upon the same principles. I therefore tackled " Trinity," and while the Rev. Dr. Morgan Dix does not as yet see fit to increase the present appropriation of $13,000 for music, I have not given up all hopes of at some future time getting in my work there among the 3,000 girls who are taught to *sew*. Meantime, I am honored with the position of Baritone Soloist in the Choir, and am known to most of the prominent ministers in New York City, as the advocate of the early training of young *girls* as choristers in every church. I have also been successful in introducing Ceylon tea to Dr. Dix, and while he is, of all men, the most conservative, I am *hopeful* he will recognize merit in this one *new* thing, even if he gets it through his grocer, who, he tells me has provided him with tea for 25 years.

This brings me to present interest in connection with Ceylon tea, and to the subject I will devote another, but more important chapter.—Faithfully yours. J. McCOMBIE MURRAY.

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### II. CEYLON TEA IN AMERICA.

200 W., 41st St., New York.

With tea merchants, grocers and all such as handled Ceylon tea in Philadelphia, I had become personally acquainted.

Albeit I was searching for churches in New York, I could not forget my old interest. I settled down

comfortably in rooms on 45th St. West of Broadway, and in course of time became acquainted with the district. I called for Ceylon tea at three grocers' before I found it, and when I did so, I got a package—familiar—*so* familiar to me in appearance. I crossed over to a drug store for some medicine and what should stare me in the face, but the same package. Within two weeks I found two other drug stores exhibiting the same, and I thought to myself "there is life in the old dog yet." I had of course heard of the wind up of the Ceylon Planters' Tea Company, and could scarcely understand where the life emanated from. I called upon Mr. William Groves, whose office I had occupied for many months in Philadelphia. I knew he had put $10,000 hard cash in the enterprise, and thought he would probably know something about it. He seemed resigned, wonderfully so, and while I was sorry for him, I admired his pluck. He told me Mr. May was carrying on the old brands on his own account, and spoke highly of him, suggested I should look him up, &c. That the Company failed to find the enterprize profitable was no surprise to me, but to find Mr. May surrounded by walls of oriental drapery all alone, with some 10,000 lb. of tea in stock, and all the packing paraphernalia of the business in the immediate vicinity, was like a dream of by-gone days.

This, then, was the "old dog" who was slow to die. "Yes—I have the tea in 110 drug stores in New York and Brooklyn. 'Here are today's orders, this for 120 lb., another for 25 lb. and so on. My year commenced in, May, and I will have sold about 25,000 lb. by August but next year, I hope to reach 50,000."

That sounded well for Ceylon tea, but as it goes direct to consumers, thought I, suppose Mr. May had not persevered, and thrown over the whole thing as a thankless and unprofitable interest, who would serve me with the tea I wanted? How comes it that American capitalists who cannot sleep at night in their anxiety for opportunity to invest money to advantage, are leaving Ceylon tea unrecognized?

"How about it, Mr. May?"

"I have made it my interest for life"—was his answer to my question to this effect "I am not losing by it, on the contrary making it profitable; but as I am independent of revenue from this source, I put all profit back into the business, that is, advertizing."

"Do you recollect," I asked "of my discouraging the attempt to cover all the United States as a field for introducing the tea, and arguing for concentration of attention to New York city alone as the centre of all channels into the country?"

"Yes, and *that* was my idea also, but most of the money was gone before I held the reins."

"How about the *blends*? Did I not argue with the planters from the first, the necessity of presenting the tea in this form, as well as pure?"

"*Yes*, and here they are."

Oh, how hard it is to convince the English, Scotch or Irish of *truth* when it does not stand out as the interpreter of personal opinion. For the Britisher to allow that "nationality" embraces *variety* of ways, means and manners, as "country" does climate and clothing is an effort if not a condescension.

I forgot who Mr. May mentioned (but I think it was Mr. Mackenzie) as having remarked after his experiences at Chicago, when he met him at Broadway: "Ceylon tea isn't wanted in this country."

Nor is it, Ceylon tea is *not* the tea to "treat" the American to, *at present*. I don't care how carefully it is made, or how good the quality, 19 out of 20 *don't* like it, and the other one is not American. *We*, of course tell them they don't "know," and they are generally courteous enough to admit it, but at the same time honest enough to say they can live without the knowledge and still be happy. *That* won't do. We *force* it on them until they find us tiresome and shew it.

*If* they use it for a time, they of course acquire the taste, but what a business to engage in for life with only one life to live!

Now, we British claim that if we are blunt we are honest and *just*, and after a long silence during which I have watched the crusade, I want to step into the ring once more.

During the season of the exposition, and previous to that, Ceylon tea was, as a figure of speech in everybody's mouth, and I really thought it would soon find a home in their stomachs. It was "getting there," and grocers *had* to have it; there was "so much *talk* about it you know."

All of a sudden, something happened. A general feeling of *pride* had seemed to characterize the remark "Oh, yes, I've tasted it, *fine* tea and more *to* it than China tea" &c. but *something* happened, and I don't hear anything or see anything about it any more—except through Elwood May's channels.

As I was returning on the elevated railway after leaving Mr. May's office, I thought of the Ceylon tea enterprize in the light of an English Company who built such a track at great expense, ran a few decorated and illuminated trains up and down at odd intervals, composed of cars to which the people were not accustomed, and then left them standing for the American people to laugh at while they allowed other companies to run their old cars on their semi-abandoned plant.

I really feel sorry for Ceylon, and I am honest in expressing my sympathy with Mr. May in his determination to keep at least one of the new cars running.

If it is suggestive of the failure of the entire train which was lately seen and the trumpet calls which proceeded from it, it is not Mr. May's fault? It was a British train, and the bulk of the capital that built the plant was conjured out of the pockets of Americans by Mr. May? This is *true*—and Ceylon planters *must*, in common *justice*, acknowledge that through Mr. May they got 30 times more advertising for their tea than was ever paid for out of *their* pockets, and while he saved his money, I have yet to understand how he *made* any. One thing is certain. He gave his *time*, and so many years of his life to an undivided interest in the introduction of the most unpopular article that was ever put on the market. So did I, and my money too—but I was interested as one of the pioneer planters and "inebriated by the exuberance of my own verbosity" as such. I had a real tea estate of my own planting, and I am glad to hear that somebody is getting out the rupees that I put into it. What amazes me is that the planting community have to all appearance, retreated from the bombardment of America on the failure of the attack of a small force (assisted by American interest) to subjugate the whole country, leaving an American to shoot away at his own people with their abandoned guns.

Why don't you ask this gentleman to come out to Ceylon? I have'nt asked him if he would go at your *invitation*, but did advise him to take the trip. He said as much as that it was not on account of lack of interest that he *didn't*, as he felt that he could meet the planters face to face and command their confidence in himself and in his line of *tactics*, while dealing in his own country with American people. "But" he said, "I have been subjected to a great deal of unjust criticism, and if I am told to mind my own business after what I have done, the time may come, and *will* come, when the aspect of our position generally will be changed. You may be surprised if I tell you that the gentleman who had just gone out as you came in, and he is in a position to know, told me that I sell more tea in packet than any other 'packet' firm in the country—including Tetley and Lipton, and I take pride in keeping up the standard which is more than can be said of all 'packet' dealers."

Now, however, comes an argument which will give everybody, *so* disposed, a chance to open fire on Mr. May, and *yet*, let me say *hold!* He says "Why will they deny *me* any personal benefit, if, by suggesting a means whereby *they* are themselves benefitted, *I* came in for *my* share? If they will back *me* up, I will guarantee benefit to them. For instance suppose they sent me $500 every month for five years. and had a bond from the American Surety Co. indemnifying them for every dollar that was not expended in accordance with such agree-

ment as they and I myself would formulate, what better protection could they have? No salary or incidental expenses are involved.

Great suggestion, you will say, for Mr. May to make! Who gets the profit on the tea sold by our advertising? Who *wouldn't* go to New York and set up business on these terms, even in Ceylon tea? Just so. You would *pass over* the *result* of such expenditure to *yourselves* as a community *because the retail profits all fall to one man.* You *forget* that you are by the expenditure of $500 monthly, selling *your* tea at a profit and establishing a market in New York City. You are not yourselves secured against overproduction, unless you secure yourselves by providing a market, and if you fail in New York, you fail in *America.*

Let me say, right here, that I am not influenced by Mr. May in writing this letter which may *appear* to be penned in his interest. Mr. May has my respect as a man who is *really* interested in Ceylon tea, and his ideas have been laid before me without reserve subject to my judgment as having *lived* for years with Americans, and knowing how they receive it on first acquaintance.

I know Ceylon planters, and am one of them. I only wish I was back, like every man who ever set foot on the soil. Give me a chance and pay my passage and you won't have to cry your eyes out before you can see me.

I will refer to the Hon. Mr. Grinlinton or Mr. Mackenzie whether the principles employed in my argument throughout are not substantially correct—apart from *individual interest* questions which do not concern me.

I *do* of course look upon Mr. May as *one* who is most peculiarly and pre-eminently suited to represent the planting interests in America. I never met a man more talented in the art of seducing *American* people from preconceived ideas of what they believe to be—say—their own *taste.* He knows their weak points, and all he wants is the *bait.* He knows where to *place* it. He is a bait himself if you use him, but you should *fatten* the bait so he can tempt the fish.

Let me illustrate. Mr. May made a remark which I thought was rather a reflection upon the planters, and really called for, although, said very incidentally. "Mr. Murray, don't you think I have shewn a good deal of the interest in Ceylon, as a stranger, and pulled the same purse strings of my friends pretty freely in the interest! And yet I have never received a vote of thanks for anything I have done since the Company was wound up. Is this so?" Now may I suggest a plan (without being looked upon as too officious) by which you can recognize him, and bring your produce before the cream of American Society? The idea is suggested by another—viz. his own—which was to have a magnificent set of elephant's feet placed in Tiffany's window representing 'The introduction of Ceylon Tea in America.' Merely an *idea* of course, but an idea which would be impressed upon the minds of *American Society.* Now why not recognize *him* officially in some such way, and put his *name* on it. Has he not, as a matter of *fact*, been instrumental in diverting about a quarter of a million dollars from the Stock Exchange into the pages of the American papers in the interest of Ceylon Tea? That the money was *lost* to those who invested, is to be regretted, but who are those who received the benefit? The *tea* was sold, and who sold the tea? The planters are *indebted* to Mr. May, and they should show their appreciation of the fact. Whatever you do or don't do, let me advise you not to ignore a man who has done and is doing so much for Ceylon.

It is easy to see that he feels very sore about it, and it is "the last straw that breaks the camel's back." It is not for me to dictate to the planters as to who they shall or shall not trust as their standard-bearer over here, but I think it would be to their interest to at least invite Mr. May out to Ceylon, pay his expenses, and look him all over yourselves. Then you need seek no one's advice, as you can all orm your own judgment of him. I agree with him that it is not in the range of possibility for an Englishman to work out the introduction of Ceylon Tea *successfully* in America. I myself could not have done what Mr. May did. Mr. Pineo worked hard with plenty of your money, but with little effect. Mr. Grinlinton can speak for himself, and his failure in America stands out in strong contrast with his success as a businessman elsewhere. Mr. Mackenzie divided his interest with India, and of course did not fully represent Ceylon.

This policy was surely rather an injury to Ceylon than otherwise?

Let me say once for all. It is not the short-lived method of noisy advertizing alone for six months that will accomplish what you want in America, but it is the constant "'Ammer, 'Ammer, 'Ammer, on the 'ard 'igh roads".

*Some* one *must* represent you in constant daily watchfulness year after year, and the sooner you realize the necessity of appointing some one to represent you in this capacity, the better for you and your interests. Messrs. Thompson or Geo. White & Co. —I forget which—published in their price current a few months ago, the following:—That while the exports of Ceylon tea had increased during the past year as a whole, the exports to the United States had shewn a falling off"—and this, mark you, on the heads of the largest expenditure yet indulged in to win the American market.

If you can hold out any hope that my conveying what I know to be facts to you, will bring about any practical result, command me in the future.—Very faithfully yours,

J. McCOMBIE MURRAY.

I have recently heard that the estimate crop of Ceylon tea for the ensuing year is 100,000,000 lb.! What are you going to do with it? J. McC. M.

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## BRITISH NORTH BORNEO: ERRATA.

Sandakan, North Borneo, March 15.

MY DEAR "OBSERVER,"—Your P. D. has made an awful hash of my letter on British North Borneo to Mr. Duff Tytler, printed in your issue of 1st Feb., by inserting the words *bad* and *yams.* What I wrote was "*good* soil" and "any amount of *game.*"—Yours sincerely,

HENRY WALKER.

[We greatly regret the blunders; but are glad that Mr. Walker is able to write and point them out, having, we hope, quite recovered from his recent illness.—ED. T.A.]

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## THE SALUBRITY OF SOUTH WYNAAD.

Kandy, April 2.

DEAR SIR,—Referring to Messrs. Parry & Co.'s and my advertisements of land for sale in South Wynaad, and wishing to have an authoritative opinion from the former on the salubrity of South Wynaad, I received from Messrs. Parry & Co. a letter, extract from which I send you for publication, and which no doubt will interest your readers. Thanking you in anticipation,—I remain, yours faithfully. W. D. GIBBON.

(Extract from Messrs. Parry & Co.'s letter dated 21st March.)

"With regard to the controversy which you refer to, and which is going on in your local papers and ours as to the unhealthiness of the Wynaad, we would point out that we have invariably had as many coolies as we required in the Wynaad during the so-called feverish months of April and May, and they have not died off like "rotten sheep." We contend that the reason why coolies leave in March for their homes, is on account of there being little or no work for them, the Wynaad being at present a *coffee* not a *tea* district. As regards Europeans, we can name several who live right through the year in Wynaad without going away.

"The disparaging reports, which have of late been about regarding the unhealthiness of the Wynaad, have been spread by men who do not desire to see any development of the Tea Industry in Wynaad, as they fear if large openings are made labor will become expensive. In this they are mistaken, as we are satisfied there is ample labor to be had near at hand for any amount of openings at same labor rates."

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## THE LADYBIRD BEETLES FOR GREEN BUG.

Ohiya, April 2.

DEAR SIR,—I have just heard from Prof. Henry Tryon, of Brisbane, with reference to my application for the larva of the ladybird beetle, and I enclose for your perusal his letter, which you may make what use of you like, as it was through the courtesy of your Mr. John Ferguson that I learnt to whom to apply for the beetles. I am writing to Prof. Tryon to send me a consignment of the *Cryptolæmus Montrougieri*, and I trust that success will attend its introduction.—Yours faithfully, GEO. H. GREEN.

*N.B.*—Probably by the time they arrive, my brother Mr. E. E. Green will be back in Ceylon and able to take charge of them.

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*Letter referred to.*

DEAR SIR,—Your letter of 25th October, addressed to Mr. C. A. Bernays of this city has been referred to me on my return from a protracted visit to New Guinea. With reference to your application for predaceous beetles that you may test their efficacy in coping with the "Green Bug" that attacks your coffee. I may mention that I could only obtain here but few of either *Vedalia Cardinalis* or *Novius Kœbeli* and indeed not many of *Rhizobius ventralis*. There is, however, a fourth scymnid beetle, *Cryptolæmus montrougieri* whose existence and predaceous habits I first directed attention a few years since, that occurs here in plenty. This I shall be able to procure for you in a few months' time and will do so should you wish it. Cryptolæmus has already been introduced to Honolulu by my friend Albert Kœbele, and has already rendered great benefit to planters there by destroying some of their worst pests. Whilst apologising for not being able to at once comply with your wishes, I am, dear sir, faithfully yours, HENRY TRYON, Entomologist.

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## THE RE-EXPORT OF TEA.

Colombo, April 8.

DEAR SIR,—There are a few points in your interesting article under the above heading to which we would like to reply. The figures although encouraging prove conclusively that as yet Ceylon tea has no real share in any of the great markets beyond those of the United Kingdom and Australia.

Dealing with your surmise that probably some of the 2,288,895 lb. exported to Germany found its way into Holland,—you will find that nearly the whole of this quantity was exported to Königsberg, clearly indicating its destination to be Russia. Any supplies reaching Holland through Germany would be sent from Hamburg; but there is no necessity for tea going from London to Holland to touch Germany, for there is a constant regular service of steamers between London and Rottordam; and you may take it that all the tea drawn from London reaches Holland in this way. The reason of Holland taking more Indian tea than Ceylon is explained by the fact that the largest dealers in tea there will not buy Ceylon and is a very large buyer of Indian; and moreover before Ceylon teas makes much progress in this and the German markets, some improvement must be made in the general make and style of the leaf of medium Ceylon pekoes and pekoe souchong. The same complaints about appearance are made both in the States and Canada, and many American firms are buying Indians today on account of the superiority of their leaf alone. Rough-leafed teas, however good in liquor, will not be taken in the States where they have got accustomed to the wiry well rolled leaf of Japan tea. This is a question worthy of planters' consideration: for there is *no* market in which leaf is not an important point. To turn to the figures of America upon which you lay special stress, we find from the American Customs returns that rather over 80 million pounds of Japan and China tea were imported as against four of Indian and Ceylon. Taking the figures of Messrs. Gow, Wilson & Stanton as reported by you, viz: 1,423,573 of Ceylon, this leaves 2½ million pounds of Indian, which is far more in accordance with what our own experience would lead us to imagine were the relative proportions of the consumption of the two grades. Reducing the domestic averages down to ounces per capita for comparison this gives

| | | |
|---|---|---|
| | Coffee | 144 |
| | Japan and China tea | 20 |
| | India and Ceylon | 1 |

proving what a large field is offered in this one market alone for Ceylon tea, and how small the progress at present made. We have no official Customs returns before us of Canadian Imports, but we know many firms there who are using four chests of Indian to one of Ceylon—again entirely owing to the superiority of the leaf of the Indian. To get a real share in these markets, it is essential that more tea should be sold locally of a suitable character, and the grades chiefly required are as follows:—Good leafed low grown teas, and as an example of leaf and general style, we would quote Vogan, the manufacture of which does great credit to the manager of the estate. Well made pekoe souchongs and pekoes with Ceylon flavor, and under this heading such teas as Glasgows, Glentilts, Glassaughs, Brownlows, Tientsins, High Forests, may be quoted as examples. Wiry leafed orange pekoes such as Dunbars, Agra Ouvah, Ottery, Stamford Hill, for which grades the local market is by far the best. Dusts of all kinds and good leafed broken pekoe free from dust.

Why so much prejudice against printing locally shou'd exist amongst planters, we cannot understand, and we return to this point again at a time, when London prices may emphasize what we have previously written upon this point.

From the London Circulars of March 20th it will be seen that the great bulk of low grown pekoe sou realized from 4¾d to 5½d per lb. and for Ceylon flavored grades of the same description—fine liquoring teas—5¾d and in a very few instances 7½d, low grown pks. 5½d to 6½d. Ceylon flavored pekoes 7¼d to 8½d; and these prices rule in face of favorable re-export returns and a strong home statistical position. What prices would have ruled had not a large proportion of last year's increase been sent to other markets? Each year, what is taking place now in London occurs, dealers naturally refusing to hold stock in anticipation of the large exports of the next few months. It is generally estimated that there will be a further increase in the exports this year of 10 per cent and we feel sure that planters will at no very distant date have to face even lower prices than those at present ruling, if what we advocate is not adopted, which is the only true method of forcing Ceylon Tea into Colonial and Foreign Markets. Of about 20 million pounds sold last year in Colombo, a proportion of which was unsuitable for any market outside Great Britain, and only there at a very low price, 12,200,000 lb. were exported direct to countries other than England, and a further large quantity was transhipped at London and sent without being landed, to America, the Colonies and the Continent. It is at this increasing trade that the Dock Company's unwise circular as to overside charges is directed. The existing high London charges have already removed from London to Hamburg, the great bulk of the China tea for distribution in Germany, Holland etc., and if persisted in, the tea now going in English bottoms to London for transhipment, will go in the excellent German or other foreign steamers at the disposal of merchants and the transhipments will take place at Hamburg or Antwerp instead of, as hitherto, London. The present London rates on tea

are far too high and instead of being raised, ought to be distinctly reduced; but as long as they are maintained even at the present level, the only chance of competing with Japan and China is by selling ocally, and getting the teas to the countries of consumption, without being handicapped by having to pay the heavy impost incurred in London Dock and Landing Charges.

Apologizing for the length of this letter,—We remain, yours faithfully, CROSFIELD, LAMPARD & Co.

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## TRADE IN BRITISH NORTH BORNEO.

DEAR SIR,—It will interest such of your readers as are on the outlook for fresh fields to invest money in to hear how trade progresses in British North Borneo. Trade Statistics' (Export and Import) are very cheering :—

In 1895 the Exports show an increase of $334,815 over 1894.

In 1895 the Imports show an increase of $263,839, over 1894.

Total increase $598,654, which is fully 19 per cent.

The exports are naturally the more interesting. Tobacco exports have increased by $132,666. Coffee by $13,295 (for this product the cultivation is young) Copra $15,000, the same remark applies to this as to Coffee, Rice and Paddy show an increase of $6,265. The *British North Borneo Herald* points out in reference to Copra "that with the numerous Coconut Plantations coming into bearing, this important industry is provided with a permanent yearly increase."

The construction of the Telegraph Line from the East Coast to West Coast is making good progress. Seven miles of Railway on the West Coast are to be constructed at once. Yours truly,

W. D. GIBBON.

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INCREASING THE CONSUMPTION OF BRAZILIAN COFFEE.—The *Rio News* of the 10th ultimo has the following :—

The recommendations of the commission appointed by the several coffee-producing States to report on means for increasing the consumption of coffee, will probably be approved by all the States in question. It is a popular fad to employ commissions and artificial means to settle all such questions, and discussion therefore may be hopeless. We shall venture, however, to characterize the whole proceeding, from inception to conclusion, as a serious mistake and certain failure. It is not the first official propaganda of this character which Brazil has known, but no lessons were learned from them, and consequently no one will oppose a repetition. If the published unofficial report of the commission's recommendations is correct, fixed commissions are to be sent to Europe to ask people to buy and drink Brazilian coffee, and 2,000,000$ will be expended in this way the first year. After that the expenditure will be reduced to 1,000,000$ a year. Besides this, foreign governments are to be asked to reduce their import duties on Brazilian coffee. In view of the 11 per cent export duty imposed here on this same coffee, which it is not proposed to change, such an application will hardly be considered seriously. It is to be regretted that so important a question is treated so superficially. There has been no discussion of its merits, everyone taking it for granted that it is wise and timely. But is it wise and timely? Is it wise to encourage the extension of this one industry, particularly at a time when production is being everywhere increased and is overtaking consumption? Is it wise "to keep all our eggs in one basket," or to develop one industry alone? Would it not be wiser to encourage some other industry and leave coffee to take care of itself? Is it timely to incur such an expense just now when the country is meeting so many financial difficulties? And is it just to take public money, contributed by all classes and occupations, for the benefit of one particular industry? A candid answer to these questions will probably show that a mistake is about to be made.

## THE ART OF IRRIGATION.

CENTURY MAGAZINE.

Irrigation as a practical art is generally misunderstood in localities where it is never applied. Even in parts of the West where it is sorely needed the prejudice against it was formerly so strong that its advocacy was repressed as scarcely better than a traitorous "libel" on the country. Irrigation, at first thought, seems like a somewhat sorry expedient to remedy the shortcomings of the weather clerk, and is quite generally regarded as a crude Western device of merely local interest. These impressions completely reverse the facts of the matter. Irrigation is a perfectly natural and familiar process. The man who waters his plot of grass, and the woman who waters her dooryard pansies, are irrigators in a rude and humble way. The citizen who grumbles at the sight of withered lawns in a public park during a dry summer yearns for irrigation without knowing it. The Western farmer who has learned to irrigate thinks it would be quite as illogical for him to leave the watering of his potato-patch to the caprice of the clouds as for the housewife to defer her wash-day until she could catch rain-water in her tubs. A generation which has harnessed the lightning should see nothing incongruous in the ancient process of storing the rain and distributing it to meet the varying needs of plants which nourish human life.

But although irrigation is both ancient and universal, the Anglo-Saxon never dealt with it in a large way until the last half-century, when he found it to be the indispensable condition of settlement in large portions of western America, Australia, and South Africa. Through all the centuries of the past the art has been the exclusive possession of Indian, Latin, and Mongolian races. Its earliest modern traces in this country are found in the small gardens of the mission fathers of southern California. They brought the method from Mexico and taught it to the Indians. But the real cradle of American irrigation as a practicable industry is Utah. A treasured historical painting in Salt Lake City shows the pioneers of 1847 in the act of turning the waters of the mountain stream now known as City Creek upon the alkaline desert. This picture commemorates the opening scene in the new industrial drama of arid America. In the hands of the Indians and Mexicans of the Southwest irrigation was a stagnant art, but the white population has studied it with the same enthusiasm which it bestows upon electricity and new mining processes. The lower races merely knew that if crops were expected to grow on dry land they must be artificially watered. They proceeded to pour on the water by the rudest method. The Anglo-Saxon demanded to know why crops required water, and how and when it could best be supplied to meet their diverse needs. He has sought this knowledge through the medium of agricultural colleges, experimental farms, and neighbourhood associations. He has thus approached by gradual steps true scientific methods, which are producing results unknown before in any part of the world.

The earliest method of irrigation is known as flooding, and is generally applied by means of shallow basins. A plot of ground near the river or ditch from which water is to be drawn is enclosed by low embankments called checks. These checks are multiplied until the whole field is covered. The water is then drawn into the highest basin, permitted to stand until the ground is thoroughly soaked, and then drawn off by a small

gate into the next basin. This process is repeated until the entire field is irrigated. This is the system practised on the Nile, where the basins sometimes cover several square miles each, while in the West they are often no more than four hundred feet square There is both a crude and a skilful way to accomplish the operation of flooding, and there is a wide difference in the results obtained by the two methods. The Indian and Mexican irrigators, in their ignorance and laziness, seldom attempt to grade the surface of the ground. They permit water to remain in stagnant pools where there are depressions, while high places stand out as dusty islands for generations. All except very sandy soils bake in the hot sunshine after being flooded, and the crude way to remedy the matter is to turn on more water. Water in excess is an injury, and both the soil and the crops resent this method of treatment. The skilful irrigator grades the soil to an even slope of about one inch to every hundred inches, filling depressions and levelling high places. He "rushes" the water over the plot as rapidly as possible, and when the ground has dried sufficiently cultivates the soil thoroughly, thus allowing the air to penetrate it. The best irrigators have abandoned the check system altogether, and have invented better methods of flooding the crops. Cereals and grasses must always be irrigated by flooding, but the check system seems likely to remain only in the land of Spanish speech and tradition where it was born. In Colorado wheat and grass are generally irrigated by a system of shallow plow-furrows run diagonally across a field. The water is turned from these upon the ground, and permitted to spread out into a hundred small rills, following the contour of the land. Some farmers bestow great pains upon this method, and succeed in wetting the ground very thoroughly. Another method of flooding fields is now much used in connection with alfalfa, a wonderful forage-plant extensively cultivated throughout the arid region. This produces three crops a year in the North and six crops in the South, and is not only eaten by stock, but by poultry and swine. To find the best method of watering this valuable crop has been the object of careful study and experiment in the West. It is now accomplished by means of shallow indentations or creases which are not as large as furrows, but accomplish the same purpose. These are made by a simple implement at intervals of about 12 inches. They effect a very thorough and even wetting of the ground.—*Public Opinion*, March 27.

## TRADE OF BRITISH NORTH BORNEO. IN 1894-1895.

As a rule, trade returns are very dry reading, but the comparative statements of Imports and Exports from and to foreign countries which we are able to publish are of great value to all who take an interest in the State of North Borneo. Our requirements and products are shown in alphabetical order under the five different stations, Sandakan, Silam, Kudat, Gaya and Padas. The increase or decrease is given for each heading. This is done with a four-sided object, *viz.*, not only to show the ups and downs, but to enable officers to explain the latter, and if possible to arrest them. The figures are as follows:—

| | 1895. | 1894. | Increase. |
|---|---|---|---|
| Imports .. | \$1,962,350.19 | 1,698,543.91 | 263,806.28 |
| Exports .. | \$1,663,906.64 | 1,329,066.86 | 334,839.78 |
| Volume of Trade | \$3,626,256.83 | 3,027,610.77 | |
| Increase | | .. | \$598,646.06 |

or over 19 per cent.

Does this look like "declining trade" as some misinformed correspondent referred to in our last issue stated? We will let the figures speak for themselves. "The slight correction" which we gave in that issue gave the increase for Sandakan alone at \$323,000 odd dollars, but as will now be seen from the Returns those figures were under the mark by nearly \$20,006. The increase for the whole territory is \$598,646, but what is more satisfactory is the fact that every station contributes largely to make it.

The imports are given under 35 headings, of these 25 show an increase.

The chief imports and increases are rice, grain and flour \$58,238, cloth \$58,683, iron-ware \$23,406, spirits and wines, \$18,247, treasure \$11,913, kerosine oil \$9,062, live stock \$6,472, opium \$20,580, damar \$21,481, fruits and vegetables \$90,80.75 and sundries \$29,477.

The Exports are also given under 39 different headings of which 26 show large increases; the more important being under tobacco which has improved by \$132,667, damar \$26,116, cutch \$17,710, gutta \$16,187, india-rubber \$13,670, coffee \$13,295, rice and paddy \$6,265, dry fish \$5,181, sundries \$36,398, The most remarkable increase is in coffee which has sprung from \$1,559 in 1894 to \$14,851 in 1895. It should also be noted that this is exclusive of the local consumption. Coffee is indeed coming to the front as one of our most successful agricultural products. Gambier is also very promising and after providing for local consumption \$966 worth was exported. Cotton has made a fair start and before long we hope to see this and other fibres largely grown and exported. The Government are very wisely giving every encouragement to the pioneers of these fibres and sugar. It is not a case of experimenting or any risk of capital; cotton may be seen thriving under the most advance circumstances even amongst grass 2 feet high.

North Borneo is offered as a home for ramie or China grass or sisil. As for sugar, one has only to look at the luxuriant growth round almost every native house to be satisfied as to its future.

For young men with a capital of not less than £2,000 free grants of 500 acres for the cultivation of these products which have been proved to grow with success *viz.*, coffee, tea, cinchona, tapioca, &c. If any reader thinks we are digressing—that this is not trade—our answer is, we may as well show how trade can be further increased Copra has increased by \$1,500 and with the numerous cocoanut plantations coming into bearing this important industry is provided with a permanent yearly increase. The heavy increases shown under bees-wax, camphor, damar, guttapercha, and India-rubber go to prove that our jungle produce is not exhausted; on the contrary. Telegraph roads and railways are being made.

It is true that there is a falling off of \$12,135 in rattans; but why? is easily answered; the natives, especially in the interior stopped cutting them in order to help to make the Telegraph. There are other decreases which we will try to explain.

*Blachan* that curry condiment which represents in the animal kingdom what a preserved durian does in the vegetable (we always like to be a long way from both) shows a decrease of \$910. Here there seems to have been a falling off as the Revenue from it, so far as ascertained, is also short for 1895.

Sago and sago flour exports have fallen off by about \$12,000; this is also due to the Telegraph and roads.

The sea produce under seaweed, seed-pearls and trepang show a decrease of \$8,852.13. As regards seed-pearls the season had not arrived but the people are now working at the banks. Under trepang the falling off is due to Kudat, and if we mistake not is owing to want of proper record, the collection of the export duty being farmed by a Chinese firm. The few headings of decreases compared with those showing such large increases when compared with 1894 proves that the progress is solid at every station and \$598,646 better on the total,—*British North Borneo Herald*, March 16.

## BLACKSTONE ESTATE COMPANY, LIMITED.

A special meeting of the shareholders of this Company was held in the Registered Office, Baillie Street (Messrs. Carson & Co.'s) on the 17th April. Mr. J. N. Campbell, Chairman, presided, and present were: Messrs. H. Creasy, G. J. Jameson, E. R. Waldock, F. Macindoe (by his attorney, Mr. Jameson), Messrs. Carson & Co represented by Mr. Jameson, and Mr. F. A. Fairlie (by his attorney, Mr. J. N. Campbell.)

Notice calling the meeting having been read, it was resolved on the motion of Mr, JAMESON, seconded by Mr. H. CREASY :—"To sanction the increase of the Capital of the Company to R160,000 (Rupees One hundred and Sixty thousand) by the issue of Three hundred New Shares of Rupees One hundred each fully paid."

Proposed by Mr. CAMPBELL and seconded by Mr. WALDOCK:—"To sanction the purchase of Kenilworth Estate by the Company".—Carried.

Proposed by Mr. CREASY and seconded by Mr. JAMESON :—"To authorise the Directors to borrow a sum of R15,000 (Fifteen thousand Rupees) for the purpose of the Company."—Carried.

## INDIAN AND CEYLON TEAS IN AMERICA.

Those who are responsible for the active branch of the work of pushing the sale of India and Ceylon teas in the United States are carrying on the campaign with vigour and ability. The newspapers are opening the eyes of the tea consuming public in America to the advantages of India and Ceylon teas over those of China, and facts as well as figures are printed from time to time to the same purpose. It is no doubt a big task to combat the opposition of those who cotrol the trade in China and Japan teas and capture the market from them. It is no easy matter to break down prejudice and win over the consumers, but this is being attempted with energy and tact. The *American Grocer* is instructing the trade on the subject, and may be regarded as an advocate of the Indian and Ceylon tea industry in the best interests of the American tea trade. In a number of the *Shipping and Commercial List and New York Price Current* just received, the tea question is dealt with at great length, and the remarkable growth in the consumption of India and Ceylon tea in America, as well as the work of Messrs. Blechynden and McKenzie, are acknowledged.

"INCREASE IN THE CONSUMPTION."

Under this head the journal referred to says: "From the official figures just at hand from the shipping ports of Colombo, Calcutta, and London we find that in 1890 the total consumption in the United States and Canada was 2,361,152 lb. while in 1895 it had grown to 9,283,114 lb. Most marked had been the increase during 1895, as compared with the previous year, it reaching almost 4,000,000 lb. or an increase of 72 per cent. "The year 1891 showed an increased of less than 300,000 lb. over 1890. During 1892 there was a gain of less than 600,000 lb. In 1893 the increase was slightly over 1,000,000lb. In 1894 the gain made was a trifle larger than in the previous year, but the last year was the one where the most material increase was shown. It should be understood, also, that the year 1895 was the only year that these teas were energetically pushed by the representatives of the tea planters in this country, who have followed a consistent and liberal advertising policy as well as an intelligent and judicious one. India and Ceylon teas are gradually taking the place of the China black teas, and as the people come to understand that no foreign colouring substances are used, and that in the matter of preparing them for the market they are manipulated entirely by machinery, they, of course, grow in popular favour. The taste of the American tea drinkers has been educated to green teas, and it will take a long time to educate the people of this country to India and Ceylon teas, but the work is progressing, and if each succeeding year shows the samo proportionate increase it will not be many years before the teas from what was once a great coffee-growing country will be a very important factor in the tea business of this country. The diversion of trade from China and Japan teas to India and Ceylon in no way menaces the material interests of the tea dealers of this country, for even now there are few houses that do not handle them."

There is also an article with the head,

"TO EXCLUDE INFERIOR TEAS."

"A plan has been sketched out by Appraiser Bunn, of this port, to restrict or provent the entry of inferior teas instead of resorting to tariff measures. He admits that the present law is inadequate. It has been an utter failure, and the official examination of teas, accompanied by socalled arbitration, could never be considered anything but a farce. Mr. Bunn refers particularly to the bogus teas, which are not grown but manufactured from spurious leaves, tea dust, decayed vegetable matter, gypsum, earth, and colouring material. The mixture is made to look quite handsome to the inexperienced eye, and its sale returns good profits to unprincipled retailers. A chromo thrown in with every purchase makes the ignorant consumer apparently satisfied. There is no question about the legitimate trade being injured, and Mr. Bunn proposes to regain lost ground by needed legislation. He is not prepared to say that the imposition of a duty would keep out the objectionable grades, but he says emphatically that the administration of the present law is defective by failing to protect consumers. Ever since March 2nd, 1883, it has been unlawful to import any tea adulterated with spurious leaf or exhausted leaves, or which contained so great an admixture of chemicals or deleterious substances as to make the tea unfit for use. The statute is all right so far as it discriminates in quality, but the provision on arbitration is all wrong, and it has caused considerable friction between the examiner, the arbitrators, and importers. Rejected teas find their way to interior markets without difficulty by being exported, as required by law, and then coming back to another port, where inspection is not so rigid.

"The proposition before the trade is to limit the number of ports where teas may be entered and examined. The necessity for such action will be made apparent when it is stated that there are at least seventy-one ports for the entry of merchandise, with appraisers at thirteen. Tea examiners are to be found only at New York, Chicago, and San Francisco It is recommended that the Government establish standards, taking five samples of Pingsuey teas, such as extra, first, low grade, pea leaf, and young Hyson; also samples of low grade Congou, Amoy, Japan, Formosa, Ceylon, Assam, and low grade Japan dust. An expert examiner is wanted at every port, and instead of the shiftless method of arbitration now in practice it is suggested that a board of five arbitrators be appointed to serve at each port where tea is entered, the appointment to be made by the Secretary of the Treasury, and the members of each board to have had an experience of ten years in the tea trade. Finally, a Government office to be created for the supervising examiner, whose duties would be to see that the law in relation to tea was being enforced everywhere.

"These suggestions of Mr. Bunn are a vast improvement over the present system, and they ideserve more consideration than the tariff proposit on. As the latter is practically buried in the House of Representatives it would be well for the tea trade to agitate the necessary reform in admitting tea, so that something definite could be undertaken and pushed through before Congress adjourns. If Mr Bunn is too conservatives or too radical in his views another plan of operation can be drawn from his timely hints.—*H. & C. Mail*, April 3.

## TEA IN THE UNITED STATES.

### THE STORM IN THE TEACUP.

CONTRIBUTED BY AN AMERICAN CORRESPONDENT.

"Oh, that mine adversary would write a book." Well, he has not done so, but he has made a confession. The leading importers of China and Japan teas have admitted, in a report to Congress, that they are unable to supply the country with clean uncoloured teas. Does not this also imply that they have been importing bad and filthy teas for years?

The difficulty they now admit has not arisen suddenly. Importers into England, Australia, and many other countries found it out long ago. It was a curious question to inquire into the subtle probings of the importing mind which prompted this confession at this juncture. Can it any way be connected with alleged holdings of immense stocks of cheap Amoys, as some cynics assert, or has the importing conscience been stirred by parallel movements in municipal government tending towards purification of the streets, closing of saloons and brothels, the weeding out of police, &c.? There is no doubt when a sudden enthusiasm for cleanliness and purification sets in, it sweeps by eddies and side currents into channels which it was hardly expected to reach.

Explanation of the phenome a might well be sought in that direction but we are inclined to ascribe it rather to bitter disappointment on the part of the small importing body because after honest and strenuous efforts maintained for years to procure clean and wholesome teas from the far Orient, they find it is impossible. The habits and circumstances of the owenrs of the small tea gardens in China and Japan are such that cleanlines in manufacture is unattainable. The empitation to colour teas artificially by the addition of plumbago and many other substances is irresistible and in the absence of rolling and firing machinery, these operations must be carried out by filthy and sweating hands, arms, and feet, often covered with dangerous sores. No wonder that one of these importing gentlemen says, "The tea testers would as soon quench their thirst from a Chinaman's bath as swallow the stuff they supply to the public."

But, as these importing gentlemen have now made confession, we must credit them with the intention of amendment; and setting aside the question of why they have so long clung to these unclean teas, let us see whether there is any truth in the alleged difficulty of obtaining the pure and wholesome article. At the price they admit such teas have been sold wholesale, viz., 10c per lb, we at once admit the difficulty. From 10c substract profits here, charges in importing from China, export duties there (which are heavy), cost of refiring and packing at shipping port, profits of middlemen who buy the teas from the small farmers in the interior, &c., transport from interior, and it will be seen that its original grower cannot get 2c per lb. for his tea. Can Jap or John be blamed if for such a price he is not over concerned as to the quality?

The average amount of leaf gathered daily by a labourer is about 16 lb., which gives 4 lb. of dry tea. Supposing the wage paid be only 4c a day, this reduces the grower's price by half, or leaves him 1c per lb. and it is well known that this is about the amount he gets on an average.

The Chinaman's garden is anything from a quarter of an acre upwards. The Europeon planters in Ceylon and India own gardens running from 200 acres to thousands of acres. On these they erect large factories equipped with rolling, firing, and sifting machinery. The fully-equipped factory costs about 40 dols. per acre on planted area. Good India and Ceylon teas grown on a large scale, and manufactured by steam-driven machinery, cannot possibly be laid down in New York at a price which would enable importers to sell at wholesale at 10c, nor even at 12c or 14c. Very low grade teas, unsuited for the English market, are occasionally brought over and sold here at 12c to 14c; but, excluding dust and fannings, which are little used here, the average price of clean machine-made tea in the London wholesale market is about 9d to 10d, while fine teas may run up to 1s 6d or even 2s. Fair average teas can be landed here at 18c to 22c, and might well be retailed profitably at less than the 50c which the importers of China and Japan teas say is the usual retail price for the trash they admit they sell wholesale at 10c. If importers are sincerely anxious, as they aver, to supply the public with pure tea, they will not grudge the prices mentioned at which the teas can be procured without any difficulty; and seeing that from their greater strength such teas go nearly twice as far as Japan or China, much less being required in the pot, they are really more economical than the cheaper coloured teas.

The following figures show that pure teas are making their way in the world. From Ceylon thirteen years ago 1,000,000 lb. were shipped; in 1895, 98,000,000 lb., of which 78,000,000 lb. were consigned to England, and 20,000,000 lb. to other countries. Indian teas entered in Britain in 1874. 18,000,000 lb, now 118,000,000 lb. In 1879, 186,000,000 lb. of China tea were consumed in Great Britain, now the quantity is about 26,000,000 lb., yet the total consumption of Britain is some 80,0 00,000 lb. more than in 1879.

In the United States and Canada the following figures show that the people are beginning to discriminate and follow the lead of other countries.

| | | | |
|---|---|---|---|
| 1892 | .. | .. | .. 3,200,000 |
| 1893 | .. | .. | .. 4,300,000 |
| 1894 | .. | .. | .. 5,380,000 |
| 1895 | .. | .. | .. 9,280,000 |

Tea is a soothing, upholding, and invigorating beverage, and drinkers of it should buy the best, say from 60c. to 1 dol. per lb. Of these pure teas, as they are very strong, much less should be put into the pot, and the tea should be poured into the cup within four minutes. People accustomed to China and Japan teas may not like the first cup of pure machine-made tea, because of its novelty, but the second they will find tolerable, and after the third they will want it, and there will be no relapse.—*H. & C. Mail*, April 3.

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## THE NUWARA ELIYA TEA ESTATES COMPANY.

The first statutory meeting of this Company was held on the 25th ult. under the presidency of Mr. C. A. W. Cameron, who explained how far the statements in the prospectus had been carried out and stated that the whole of the capital had been placed without payment of any underwriting or other commission.

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## THE TEA MARKET

closes for the Easter holidays for a better tono and favourable prospects for future business, as prices rule at so moderate a range. It is from Ceylon that new supplies will reach in any quantity till the new season, meanwhile the stock in bond must be drawn rom largely to meet the ever increasing demand. This market at the present is the cheapest in the world, and affording shippers every facility to supply their wants, be they large or small.—*L. & C. Express*, April 3.

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## CEYLON TEA IN AMERICA.

From our Tea Delegate in America we have received three papers which show how largely our staple product is being advertised in the West. A lot of valuable facts is given in the notices, and several of them are illustrated. One has a rather attractive sketch of a drawing-room from which representatives of Japan and China are taking their exit thus addressed by the hostess—"Go: We now use Ceylon tea exclusively, because of its purity. It has a

equal. We say 'pure teas or none'". Another has a reproduction of the well-known picture of a Ceylon maiden picking tea. In another paper there is also an article of which it is only necessary for us to quote the headings:—"Big nations drink tea; It's the favourite beverage of the bravest peoples; new sources of supply; Ceylon and India now take precedence of China and Japan as producers." From another source we have copies of Canadian papers containing attractive advertisements of "Salada" tea.

## THE AGRICULTURAL MAGAZINE.

The April number of this periodical contains a number of interesting articles, as will be seen from the following table of contents:—Season notes; The Nitrogen Question again; Occasional Notes; Rainfall at the School of Agriculture during the month of March; The Peaty Deposits in the Kurunegala Tank; The management of Dairy Cattle; Paddy Pests; The Preserving of Fruit; Soil Analysis; Household Hints; The Nutritive Process in Plants; Rhea Fibre; Correspondence; and General Items.

The nitrogen question is one that affects the interests of all cultivators of land, and the reference to the influence of the "sensitive plant" on coconut soils indicates that there is a good deal yet to be learnt about the utilization of our so-called "weeds" for useful ends—viz., as an economic source of nitrogen for our cultivated crops. We hope to refer to this subject at greater length. Mr. Modder's paper on the Peaty Deposits in the Kurunegala Tank is also a valuable contribution from a careful observer.

## THE STANDARD TEA COMPANY OF CEYLON, LIMITED.

Offices: 25, Fenchurch Street, London, E. C., Directors: Messrs. Alex. Brooke (chairman). Robert Kay-Shuttleworth, Norman W. Grieve, and William Rollo. Secretary: A. Trafford Brooke.

The following is from the report of the directors to the shareholders, to be substituted to the general-meeting to be held on Tuesday, the 21st April:—

The profit and loss account show a profit on the working of the estates in Ceylon of £13,748 9s 2d, which, with amount brought forward from last year, less interest and home charges, shows a sum of £13,109 7s 4d available for division. In July, 1895, the directors, under the powers entrusted to them, distributed an interim dividend for the six months ending June 30th 1895, of 5 per cent (10 per cent per annum), absorbing £2,800. They now recommend a dividend at the rate of 10 per cent (making 15 per cent for the year), absorbing £5,600, the placing £1,500 against depreciation of machinery, £2,500 to reserve, and the carrying forward to the next year £709 7s 4d. The favourable results again have been aided by coffee at high prices and by a good exchange. The coffee produced in 1895 was about 680 cwt, which realised above £2,900.

The average exchange for the Company as drawers in Colombo was 1s 1½d, against 1s 1 13-32d in 1894, and against an average of 1s 3 7-32d in 1893. The rate was 1s 5 1-8d in 1891, when the Company began operations. The tea from the Company's Uda Pusellawa properties sold during 1895 averaged, in Mincing Lane, a higher price than any Ceylon estate or group of estates producing above 200,000lb. During the two previous years these teas held the same distinguished position in the market. For this much credit is due to the manager at St. Leonards. The directors have to report, with deep regret, the death in July last of their esteemed colleague, Mr. Peter Moir. To succeed him Mr. William Rollo was appointed in accordance with the articles of association. The Company's properties are now of 3,298 acres, with 1,470 acres of tea considered in full bearing, viz.: In Uda Pussellawa—St Leonards, 725¾ acres, 238 acres tea bearing; Liddesdale 814 acres, 140 acres tea bearing; Eskdale, 238 acres, 210 acres tea bearing; Gordon, 365 acres, 74 acres tea bearing; Tulloes 450 acres 175 acres tea bearing: in Upper Maskeliya—Gouravilla and Upper Cruden, 705 acres, 633 acres, tea bearing. There are also 127 acres tea in partial bearing, and some 621 acres in addition planted with tea. On St. Leonards, Gordon, and Tulloes estates there is still a certain amount of coffee interspersed through the tea. Mr. Alexander Brooke, the director who retires by rotation, being eligible offers himself for re-election.

## THE PANAWAL TEA COMPANY, LIMITED.

### ANNUAL REPORT.

The Directors have the pleasure to submit the general balance sheet and profit and loss account for the year ending December 31st, 1895, duly audited—

| | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| The net amount at credit of Profit and Loss Account, including balance brought forward at 31st December 1894, after providing for general expenses, Directors' and Auditors' Fees .. .. | | | | 2,991 | 3 | 8 |
| An interim Dividend of 4 per cent on the ordinary shares for the half-year ending 30th June, was paid 21st September 1895 amounting to .. | 680 | 0 | 0 | | | |
| It is proposed to pay a final Dividend on the ordinary shares from 1st July to 31st December 1895, at the rate of 6 per cent (making a distribution for the year of 10 per cent free of Income Tax), which will absorb .. .. | 1,020 | 0 | 0 | | | |
| Dividends on the 7 per cent Cumulative Preference Shares were paid for 1895 in full, amounting to .. .. | 371 | 0 | 0 | | | |
| It is proposed to write off part of the cost of New Extensions, Machinery, &c, completed during the year .. | 796 | 10 | 10 | | | |
| Leaving to be carried forward to next year a balance of | 123 | 12 | 10 | | | |
| | £2,991 | 3 | 8 | £2,991 | 3 | 8 |

The Directors recommend the distribution of a dividend at the rate of six per cent on the ordinary shares of the Company from 1st July to 31st December 1895, making, with the interim dividend paid to the 30th June 1895, a distribution at the rate of ten per cent for the year.

The acreage of the Company's properties on 31st December last was:—

| | Acres. |
|---|---|
| Tea in full bearing .. .. | 443 |
| Tea in partial bearing .. .. | 67 |
| Tea under two years old.. .. | 67½ |
| Tea under one year old .. .. | 100½ |
| Jungle .. .. .. | 379½ |
| | 1,057½ |

The Ceylon Manager visited the estates on the 14th, 15th, and 16th January 1896, and reports them in good order.

With a favourable season, the crop for 1896 is estimated at 200,000 lb.

Owing to the considerable increase of acreage in bearing and the prospective early large increase, the two existing factories on Ernan and Glassel estates would not be adequate for the work which would

develope upon them. The Directors considered it would be more economical apart from the question of control, to construct, work and maintain a large central factory worked by water power, of which there appears to be an ample and almost constant supply, than to construct a small third factory upon the Rangegama estate.

The construction of this central factory with large withering space is now well in hand, and the machinery from the other two factories will be used with some additions in its equipment.

It is proposed to pay the cost of this new factory, estimated at R40,000, out of profits, spreading the repayment of this expenditure over some two or three seasons. To enable the Company to do this, the Directors decided to offer to receive money upon deposit at interest for periods of 6 and 12 months and upwards, repayable thereafter at three months' notice on either side. They very quickly received £1,170, which they deemed sufficient for their present requirements. While they congratulate the shareholders upon being in the position to raise the required funds so easily, and without being to the expense of a debenture issue, they believe these deposits present a very high class security, being practically the only liability upon the Company's estates, which are estimated as worth £30,000 at the least.

The Directors considered it advisable, in order to strengthen the position of the Company, not to use the sum set aside last year for "Reserve Fund for Machinery, Depreciations, &c.," and have treated it distinctly as Reserve, taking it out of the Company's business and investing it in New South Wales 3½ cent stock, 1918.

Mr. Henry Wallace Hornby, the Director retiring by rotation, being eligible, offers himself for re-election.

Messrs. Fox, Sissons & Co., Auditors to the Company, offer themselves for re-election.—By order of the Board, J. HOLGATE BATTEN, Secretary.

London 30th March 1896.

## THE RANGALLA TEA COMPANY OF CEYLON, LIMITED.

Report of the Directors for the year ended 31st December, 1895, to be submitted at the annual general meeting of shareholders, to be held at the Company's Offices on the 26th March, 1896.

The Directors have the pleasure to submit the balance sheet and profit and loss account to the 31st December, 1895, duly audited.

From these it will be seen that a total nett profit of £3,372 5s 10d, including the balance of £1,811 2s 8d brought forward from last account, has been realized, out of which there have been paid a dividend of 7 per cent., free of Income Tax, for the year 1894, and an interim dividend at the rate of 8 per cent per annum, free of Income Tax, for the half-year ending 30th June, 1895, and the Directors now recommend a further and final dividend at the same rate, leaving a balance of £72 5s 10d to be carried forward to the present year. The result of the year's working has been satisfactory.

The Company's produce has been disposed of as follows:—

| | | | | | |
|---|---|---|---|---|---|
| Tea .. | .. 7,235 | lb. sold in Bombay. | | | |
| ,, .. | .. 194 396 | ,, ,, London. | | | |
| Total of Tea .. | 201,631 | lb. sold, realizing .. | £5,803 | 1 | 10 |
| Cardamoms .. | 1,260 | lb. gross 1,160 nett sold locally in Ceylon and realizing .. | 91 | 1 | 10 |
| ,, .. | 1,100 | lb. gross 1,012 nett, sold in London .. | 69 | 4 | 7 |
| Cinchona Bark .. | 34,802 | lb. sold in London for .. | 52 | 5 | 9 |
| | | | £6,015 | 14 | 0 |

The sales of tea show a nett average price per lb. of 6·90 pence, equal to 51·83 cents per lb., the exchange for the Company's drafts during the year having averaged 1s 1 5-16th d.

The Acreage of the Estate is—

| | | |
|---|---|---|
| Tea in bearing .. | .. 591½ | Acres. |
| Tea not in bearing .. | .. 112½ | ,, |
| Cardamoms .. | .. 65½ | ,, |
| Grass and Fuel Timber | .. 25 | ,, |
| Forest and Waste Land | .. 446½ | ,, |
| | 1,241 | Acres. |

the yield of tea per acre having been 340 lb.

The balance sheet shows an additional expenditure on capital account of £590 4s 4d, embracing extension of area under cultivation, and additional machinery, as well as the final payment to Government in respect of the cart road referred to in last year's Report, which has now been satisfactorily completed.

During 1895, 215 acres were manured with Castor cake and bones, and Messrs. C. Young and W. Sinclair continue to send most encouraging reports of the beneficial effects from the manuring done during the two past seasons—not only in the enhanced yield, but also in the greatly improved appearance of the tea bushes. It is proposed this year to go over again the 50 acres manured in 1894, and later on another 120 acres will be done as on account of 1897.

The Company's properties are in excellent order and good condition, and, with a favourable season, promise well for the current year.

## THE BANDARAPOLA CEYLON COMPANY LIMITED.

The third annual ordinary meeting of the Bandarapola Ceylon Company, Limited, was held at the offices of the company, 16, Philpot Lane, E.C. on Monday March 30th, 1896, at twelve noon, Mr. G. W. Paine (chairman) presiding.

Notice convening the meeting having been read by the Secretary,

The Chairman said he supposed they could take the report and accounts as read. The amount on which they had to declare a dividend was £900 larger than last year, which was accounted for by the call of 10s per share, which had been made in 1895 Another call of 10s had since been made, and the ordinary shares were now £15 paid. He was sorry that the net profits were £811 less than last year. The decrease of crop as compared with 1894, 8,578 lb. was caused by the severe drought experienced in the early part of the season, and also he thought to a certain extent by the prevalence of fever and dysentery in the Matale district. Unfortunately Mr. Hugh Fraser, the managing director, had through ill-health to give up the personal charge of the company's property. but they had been fortunate in being able to again secure the services of Mr. James Anderson as manager, the latter gentleman being now in charge of the properties. Together with the deficiency of tea secured, they, in common with many other Ceylon companies, had experienced a decrease in prices, the average price for 1895 being 6·788d against 7·602d for 1894.

Mr. Paine then gave particulars of a new water supply that had been arranged for the Bungalow and the Coolie lines, and which had turned out a great success and it was hoped they would now have much less illness among the coolie labourers. He remarked that Sir George A. Pilkington, a director of the company who is now on his way home from Ceylon, recently visited the estate, and reports in a letter just received by the mail that the Muendeniya clearing (the first one undertaken by the company after acquiring the property) is the most successful that he has ever seen, while the Managing Director writes to the board as follows:—

"Most things are progressing satisfactorily, the growing tea is looking well, the factory additions are in progress, and the Muendeniya clearings are very promising. This year's clearing, about ninety-six acres, was burnt off, and the digging out of lantana roots, roading, &c., were begun.

"This year's clearing is likely to be as good as its predecessors, and when it is planted up, which it will be in the course of a few months, there will be about 400 acres of tea planted with fine jats (to give leaf in due course), exclusive of 200 acres cocoa, planted since the formation of the company.

"Last year's clearing is progressing very favourably, and to all appearance very little supplying will be required."

He was very pleased to report a considerable increase of crop to March 7th this year. To that date the crop secured is 53,559lb, being 25,421lb ahead of last season to same date. This year's crop to March 7 was equal to that of last year up to May 4, and nearly double that secured to March 7, 1895.

They had, as the shareholders knew, exhausted all their available capital, and to provide for the additions to the factory, which is being practically rebuilt, and the further development of the estate they proposed shortly to issue fresh capital. They had not yet decided on the amount nor the manner in which it would be issued, but probably it would be as before—viz., half in shares and half in debentures.

The Chairman then proposed "that the reports and accounts as presented to the shareholders be received and adopted."

In seconding this resolution Mr. C. J. Scott said the crop was no doubt disappointing, but in addition to the causes mentioned, he thought the large decrease was partly owing to the large acreage pruned last season, but no doubt there would be a large increase this year, and the new clearings promised excellently.

A few questions having been asked, the resolution was put to the meeting and carried unanimously.

Mr. G. W. Paine proposed, seconded by Mr. C. J. Scott, "that a final dividend of 3½ per cent, free of income tax, be declared payable, forthwith, making in all 6 per cent for the year." Carried unanimously.

On the motion of Mr. C. J. Scott, seconded by Mr. Andrew, Mr. G. W. Paine was re-elected a director of the Company.

Mr. L. F. Davies proposed, Mr. John Vicary seconded, and it was carried unanimously, that Mr. John Dalgleish, C A. be re-elected auditor for the ensuing year.

Mr. C. J. Scott moved a vote of thanks to the Ceylon and London staffs for their efficient working of the company's property and business, and spoke in highly commendatory terms of both. Mr. Andrew seconded the motion, and the Chairman said he fully endorsed what had been said with regard to the staffs. Carried unanimously.

A vote of thanks was also passed to the chairman and directors.

Mr. Paine replied to the compliment, and the proceedings then terminated.—*H. & C. Mail*, April 3.

## SUNNYGAMA (CEYLON) TEA ESTATES COMPANY, LIMITED.

Capital £70,000 divided into 2,000 preference shares, 5,000 ordinary shares of £10 each, of which 500 preference shares and 5,000 ordinary shares have been issued. Directors: Messrs. James Crichton Kinmond (chairman), William Forsythe, Robert Lyall, and R. B. Magor. Secretaries, Messrs. George Williamson & Co, 138, Leadenhall Street, London, E.C.

The following is from report submitted to the shareholders at the third ordinary general meeting held at the Company's offices yesterday (Thursday.)

Crop.—This shows a substantial increase over last season—viz.: Sunnycroft, sold in London, 1894, 284,550lb; average price, 6⅔d; 1895, 342,583lb; average price, 6⅔d. Sold in Ceylon, 1894. 48,349lb; 1895, 37,749lb. Pambagama—Sold in London, 1894, 200,115lb; average price, 6⅔d. 1895, 274,959lb; average price 6 11-16d Sold in Ceylon, 1894, 25,525lb; 1895, 17,919lb. Total 1894, 558,539lb; average price, 6⅔d. 1895, 675,201lb; average price, 6 11-16; while the average price obtained also shows improvement. Reports from the managers are very satisfactory in regard to the improved condition of the old gardens through careful treatment and pruning, while the large area of young plant is most promising, and should add very largely to the outturn of the estates during the current and succeeding years as it comes into full bearing. The accounts show a profit of £5,578 3s 2d which it is recommended to apply as follows: Interim dividend paid in September, 1895, at 4 per cent., £2,000; final dividend now recommended at 8 per cent £3,000; dividend on preference shares for half-year at 6 per cent per annum, £150; leaving a balance of £128 3s 2d to carry forward, which makes the amount at credit of revenue account, after debiting a proportion of preliminary expenses, £358 13 5d.—*H. and C. Mail*, April 3.

## TEA IN AMERICA.

NEW YORK, March 25.

This market continues in the same unsatisfactory condition it has been in for months. Demand is conservative, and the general tendency of the market is in favor of buyers except on fine Formosas and low grade Japans. Greens rule steady.

Last week the Montgomery Auction and Commission Company sold 8,316 packages teas as follows: Moyune—98 Hyson, 5¼ to 7c; 729 Young Hyson, 7 to 22½c; 441 Imperial, 9 to 14½c; 516 Gunpowder 9¼ to 24½c. Ping Suey—99 Young Hyson, 8½c; 1,406 Gunpowder, 6½ to 14c; Japan—333 Pan Fired, 9 to 20c; 1,581 Congou, 7¼ to 26½c; 248 India and Orange Pekoe; 12½ to 20½c. Oolong—649 Foochow, 7¾ to 9¼c; 2,532, Formosa, 12½ to 40c.

Today at noon the Montgomery Auction and Commission Company will sell 5,685 packages, viz: 1,428 half-chests Moyune, including desirable chops; 596 boxes Pingsuey; to half-chests Japan, 180 half-chest Japan, basket-fired; 1,190 half-chests and boxes Congou, including all grades; 169 packages India, Java, and Ceylon Pekoe; 2,122 half-chests and boxes Formosa, new season's.—*American Grocer.*

## AGRICULTURE IN TRINIDAD.

Mr. C. W. Meaden, Manager of the Government Farm, Trinidad, writes under date 19th March:—

I beg to enclose my annual report for last year. I get your valuable magazine and frequently find most useful hints in it, in my particular line. You will observe that we are particularly fortunate in the health of our animals, and obtain good prices for them generally.

The farm land is in natural grass which is in excellent heart owing to the amount of good manure it receives from the artificial feeding the stock get. We have 250 acres under pasture sub-divided into convenient sized fields.

We have one or two Ceylon people here who are not favourably impressed with Trinidad in comparison with the "Fragrant Isle of Spices." We do not seem to have the energy here that obtains in Ceylon and which has been able to carry your Colony so surprisingly to the front with *tea*. Hoping the good success will continue.

## PERAK NEWS.

From the Kuala Kangsar Monthly Report for February in the *Perak Government Gazette* we quote the following:—

Mr. R. L, Rankin put an application for 500 acres for coffee planting. Mr. Farrest, who worked for many years under Sir Graeme Elphinstone in Ceylon, has been requested to select the land and will probably obtain the management of the estate, the whole of which it is proposed to open up in the next three years.

In the Batang Padang Monthly Report for February it is stated:—

On the 21st Mr. Jansen, Manager of the French Tin Mining Company at Temoh, applied for 300 acres of land near the Company's concession, for coffee planting.

IN THE KUALA KANGSAR LAND OFFICE NOTICE, IT IS NOTIFIED.—No. 77.—AGRICULTURAL LEASE TO BE CANCELLED.—Notice is hereby given that owing to the failure of the lessees to comply with the conditions under which they acquired the below mentioned Agricultural Land, viz :—A *boná fide* commencement to open to be made within twelve months from the date of the lease—*i.e.*, from the 15th October, 1894:

In accordance with the terms and conditions contained in Government Special Circular dated Taiping the 22nd April, 1891, and the provision of Clause 8*a* of Order in Council No. 6 of 1891, the said lease will be cancelled and the land revert to the Government of the State on the expiration of three months from the date of publication of this notice in the *Government Gazette*, if within that time good cause be not shewn to the countrary.

| Lessee. | Title. | Land held Since. | Area. | District. | Division. |
|---|---|---|---|---|---|
| Dalziel Buchanan & Gordon Frazer | Agricultural Lease 68 | Oct. 15, '94 | A. R. P. 462 2 0 | K. Kangsar | Pulau Kamiri |

# TEA.

## EXPORT OF TEA FROM CHINA TO ODESSA.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Hankow and Shanghai .. | 27,240,863 | 22,555,223 |

## EXPORT OF TEA FROM CHINA TO GREAT BRITAIN.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Canton and Macao .. | 7,446,099 | 7,813,790 |
| Amoy .. .. | 760,842 | 772,692 |
| Foochow .. .. | 11,175,408 | 14,357,248 |
| Shanghai and Hankow .. | 21,111,512 | 21,591,499 |
| | 40,493,861 | 44,535,229 |

## EXPORT OF TEA FROM CHINA TO UNITED STATES AND CANADA.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Amoy .. .. | 14,665,055 | 19,447,739 |
| Foochow .. .. | 6,056,651 | 4,626,555 |
| Shanghai .. .. | 29,029,320 | 25,796,160 |
| | 49,761,026 | 49,870,454 |

## EXPORT OF TEA FROM JAPAN TO UNITED STATES AND CANADA.

| | 1895-96. lb. | 1894-95. lb. |
|---|---|---|
| Yokohama .. .. | 29,801,404 | 28,686,847 |
| Kobe .. .. | 18,625,900 | 16 726,614 |
| | 48,427,304 | 45,413,461 |

—*China Overland Trade Report*, April 9.

# THE KALUTARA COMPANY, LD.

The prospectus of this Company has been issued, the properties to be acquired being Pallegodde Estate comprising 250 acres of tea in full bearing, 67 acres of tea planted in 1895, 38 acres now being opened for tea, 7 acres of coconuts and arecanuts, and 338 acres of forest.—total 700 acres more or less : price £13,000 sterling. And th adjoining estate, St. Columbkille, comprising 177 acres of tea in full bearing, 17 acres of tea planted in 1895, 5½ acres now being opened for tea, and 186 acres of forest, etc.—total 385½ acres : price R155,000.

The first issue of shares, all of which have been subscribed for is R400,000.

# MALAYA AND CEYLON PLANTERS.

The paper read by Mr. Swettenham, the newly-appointed Resident-General of the Protected States in the Malay Peninsula, appears to have been, as a paper, of much general interest. But for us in Ceylon it was possessed of a particular interest. Mr. Swettenham's references to the part taken by Ceylon planters in the endeavour to introduce a planting interest into that peninsula will be read with attention by one and all of these. The lecturer was apparently driven to the admission that, in a degree—and that a sensible one—the Government of the Straits Settlements has not hitherto offered any inducement sufficient to attract or retain intending settlers from this island. The experience of those who have pioneered the industry in the peninsula has not been such as to induce others among us to fully follow the example set. Unfortunately, Mr. Swettenham would not seem to have particularized the respects in which the regulations as to land, &c., have operated adversely to success. It would have been a satisfaction to us in Ceylon had the time at his disposal admitted of his doing this. But we have to content ourselves with the statement made in general terms that the conditions as to settlement offered do not suffice to attract European settlement. The lecturer put forward a very striking test by which such an inducement might be gauged. There are no instances, he said, among the Europeans who have opened up land there for planting purposes, of any of them having realized wealth by their enterprise. Indeed, so far as we may judge from what was said on this point, it must be held that, hitherto, those who have started planting in Perak and the other protected States have not had their hopes realised. Apparently Mr. Swettenham attributes this failure to two main causes. These are—firstly the terms on which land may be acquired and held, and, secondly, the ever-present difficulty as to labour. As to this second obstacle, Mr. Swettenham appears to think that much might be done to attract the Indian coolie to the States. For ourselves we cannot but think that so long as the intending native emigrant from India can obtain all that he wants by merely crossing the streak of water that divides him from Ceylon, he will not care to venture farther afield. For a very long time to come it is doubtful if the needs of the Ceylon planters for this kind of labour will be more than met. Until the supply exceeds the demand here, there is little chance, we think, of any overflow seeking settlement in the Straits. We conceive that the lecturer, when advocating the location of natives from India therein, had chiefly in mind their establishment as local cultivators of the soil, apart from work upon estates owned and worked under European proprietorship. We should say, however, that the latter condition must precede the former. Passing from this point of the address it may be remarked that very complimentary allusion was made by Mr. Swettenham to the Civil Servants of Ceylon. He contented himself with making the claim that those of the Straits were not the inferiors of their brethren in Ceylon. Unfortunately some other speakers were not so modest. One of them at least asserted that the members of the Straits Civil Service could not be equalled as public servants throughout the world! We regret that this tendency to undue glorification should be sometimes too apparent during the discussion that follows papers read on colonial topics. It is a mistake to "protest too much." Undoubtedly Mr. Swettenham and his

fellow officers deserve encomium for what they have accomplished under circumstances of exceptional difficulty, but Mr. Swettenham would be the last to endorse the high superiority claimed for them by less responsible speakers.

## COCONUT OIL IN AMERICA.

CEYLON.—It is reported that the Edmonton, with 700 tons, had put into St. Thomas in distress, which in all probability will delay its arrival for a month or six weeks at least. So far, however, the market has not changed, for the reason that those interested have had no cable replies to their requests for information as to the amount of damage sustained. Should this prove later on to be more serious than at first expected an upward turn in values will in all probability occur, as it is known that the bulk of the 700 tons, as well as the 300 tons of Cochin on board, is sold for consumption, and its non-arrival will be the source of inconvenience to many consumers who were daily expecting the arrival of these supplies to meet their current needs, which now in all probability they will be obliged to purchase at a higher figure. Already several orders are in the market at a shade under 5⅝c., though most holders are asking 5¼c. Sales are reported of 25 tons at 5⅛c. and 10 tons in lots at 5¼c.—*Oil Paint and Drug Reporter.*

## THE SPRING HARVEST IN BENGAL.

It appears from an Indian contemporary that taking all the principal crops together, including that is to say tobacco, sugar-cane, opium and ganja, the spring harvest in Bengal this year will be less than that of last by an area of 163,000 acres or about 1½ per cent. The general quality of the harvest is put at 11¾ annas against 13½ annas, which was the figure last year. As in other provinces the autumnal drought was the cause of less land being sown, and the absence of rain since accounts for the inferiority of the crops.

## MR. CHARLES LEDGER.

It is not generally known that we have still amongst us (at Kenmore, near Goulburn, New South Wales), Mr. Charles Ledger, famous in two hemispheres for the introduction to Java, after most perilous adventures, of the most valuable variety of any species of Cinchona. To the last generation of Australians his name was very familiar as the introducer of alpacas and other animals into New South Wales, only accomplished, like his previous venture, after much vicissitude and actual peril.

It falls to the lot of a very few men, either in Australia or out of it, to have been the means of doing so much good to their fellow-men as Mr. Ledger has been able to effect by his introduction of Cinchona Calisaya, var. Ledgeriana. The old gentleman is still hale and hearty, and it occurred to me that this journal would be a particularly appropriate medium by which to remind our raisers of "new products" in New South Wales of the Cinchona enterprise, which, although forty years old, should be fresh in the memories of the present generation.

As regards the Cinchona, Messrs. Howard and Sons, the great quinine firm, wrote to Mr. Ledger quite recently:—"It is not too much to say that it is entirely owing to the seed received from you that Java is now supplying the world with quinine. Some of the cultivated Bolivian bark is of quality equal to the Java bark from your seed, but it seems that the cost of cultivation is much greater than in Java."

To which Mr. Ledger remarks, in a note to me:—"The expenses of cultivation are not greater in Bolivia. It is the distance from port of shipment that causes greater extra expense than in Java. From where cut, the bark is carried on the backs of Indians out of the Monte at least 20 to 100 miles, then from 300 to 1,200 miles on donkeys or llamas to La Plas (city of 60,000 inhabitants); there it is put up in packets of 150 lb net of bark, covered with half a bullock hide (no return allowed for hide when sold), and carriage to Tacna by mules, 285 miles, then 40 miles by rail for shipment at Arica. Export duty in my time, or up to 1853, 20 dollars per quintal of 100 lb."

Messrs. Howard & Sons again write:—"There is certainly no doubt of the importance to the Dutch plantations in Java of the seed supplied by you in 1865. Almost the entire supply of bark from Java is sold as Ledgeriana, and comes from that supply. The only complaint that they could make would be that it has turned out so rich that they are supplying too much for the world to consume. C. succirubra from India and Ceylon is rapidly becoming a thing of the past. English Government plantations apparently fail to propagate your seed to more than a very small extent, and a great deal of Ledgeriana, which is grown in Ceylon, is from Java seed. It is difficult to give exact figures, but the quantity of bark from your seed now produced per year cannot be far short of 10,000,000 lb."

Although infinitely less important to the world than the Cinchona venture, Mr. Ledger's alpaca expedition has rendered him better known to Australians, and the story of the alpacas is familiar to people who lived in Sydney thirty or forty years ago.—*Agricultural Gazette* of New South Wales.

THE CEDAR FORESTS OF MOUNT MLANJE.—One of the earliest acts of Sir H. H. Johnston's administration as Commissioner in British Central Africa was to declare the great mountain mass of Mlanje, in the south-eastern corner of the British territory, Crown property. The Commissioner's main object in doing so was to protect the remnants of the magnificent cedar forests that were still found on Mlanje, and that this policy was a wise one is shown by the report which has just been addressed to the Commissioner by Mr. John M'Clounie, who is in charge of the Government's forests in that district. In this report Mr. M'Clounie says:—"I have now been all over the Ruo plateau and the Luchenya, and the Likubula gorge, and the Tuchila plateaux. The district round the source of the Tuchila is by far the best and most timbered part of the mountain. A few straggling trees are seen near the source of the Ruo and only one of any size, while the Luchenya is dotted with cedar along its slopes. The Likubula is well wooded, but the forests are almost inaccessible. On the plateau round the source of the Tuchila the ground is covered with compact cedar forests and may be estimated at 700 to 800 acres, on that around the Likubula about 200 acres, and a further 100 acres round the Luchenya. Giving the number of trees to the acre as 150, the total number of full-grown existing trees should stand at 150,000, with an average of 40 cubic feet of timber each. At the present value of 3s per cubic foot the total value of these trees would be £900,000. But if this timber was sold, as it ought to be, at 6s a cubic foot, the wealth would be doubled. As I have gone all over the woods and noticed quantity and quality, these figures may be taken as near the mark. It is no exaggeration to say that five or six years' more delay in the assumption of control over the remaining patches of cedar forest would have meant the entire extinction of this unique conifer, which there is abundant evidence to show was once indigenous to all the high mountains and plateaux in the southern part of British Central Africa. Up to the present I have cut up nothing but dead wood which, in most cases, is in good, seasonable condition. The supply of timber yearly might be considerable and not materially affect the forests for many years, especially as there are large numbers of young trees growing up in all the woods which must now be protected from fire. I have this season sown a large quantity of cedar seed which should be ready in a year to transplant. The ground to be planted must be thoroughly hoed and cleaned to remove grass, etc., and prevent fires."—London *Times*, April 1.

## TEA IN AUSTRALIA.

A good business has been done in China tea, sales comprising 450 half-chests common congou, 2,850 half-chests panyong at 4½d to 5d, 300 half-chests good panyong at 6d to 6½d, 800 quarter-chests buds at 5d to 5¼d, 70 quarter-chests fine buds at 8d, 200 quarter-chests S.O. pekoe at 6¼d to 7d, and 200 half-chests kooloo. Ceylons have been in fair demand, and sales are reported of 500 packages at prices ranging from 6¼d to 1s. Of Indians 90 packages have been sold at 6½d to 8½d. At the auction sale on Tuesday there was a good demand for Ceylon teas at steady rates. Out of 328 chests and 60 half-chests offered, sales were made of 249 chests and 60 half-chests; pekoe (123 chests and 60 half-chests) at 6¼d to 8¼d, and pekoe souchong (126 chests) at 6d to 7½d. Of China tea. 4,699 packages were offered, but bids in most cases were below reserves, and only 310 half-chests and 49 quarter-chests were sold at 4½d to 5½d for good common to medium panyong, 6¼d to 7d for fine panyong, and 5d for buds.—*The Australasian.*

## CEYLON TEA IN AMERICA.

Copies of two American papers have come to hand, containing attractive advertisements of Ceylon tea, by Messrs Bottomley & Beling. One says :—

Measure it—one teaspoonful makes three cups—it 's all tea—lasts longer—a pound means more—that 's your interest more than ours. It 's a delicious tea, you 'd buy it if it only went half as far.

In another we read :—

Sallow cheeks—too much coffee will make you bilious—try a change—tea—no, not ordinary tea, that might be worse—but pure Ceylon and India tea—Machine rolled, clean, delicate.

## VARIOUS PLANTING NOTES.

ENEMIES OF CINCHONA IN CEYLON.—At a meeting of the Entomological Society on March 18:—Mr. E. E. Geen exhibited the eggs of some species of Locustidæ extracted from the stem of a young chinchona tree at Pundaloya, Ceylon. He said the species of the parent insect was undetermined; it was possibly either a Cymatomera or a Cyrtophyllus, both of which possess large sabre-shaped ovipositors. A slit half an inch deep and more than two inches long had been cut into the hard wood, in which the eggs had been symmetrically deposited, edge to edge, with the coloured part inwards. The greater part of each egg was of fine texture, and coloured green; but at the extremity from which the young insect would make its exit the egg-shell was soft, plaint, and beautifully reticulated. The row of flattened green eggs lying side by side resembled an acacia leaf, but as they were concealed within the stem the resemblance was apparently without motive. —*The Athenæum.*

INSECTS AS AN AID IN SURGERY.—One of the most curious uses to which insects are put was related at a recent meeting of the Linnæan Society of London. It was stated that the Greek barber-surgeons of the Levant employed a large species of ant for the purpose of holding together the edges of an incised wound. The ant, held with a pair of forceps, opens its mandibles wide, and is brought near to the cut being treated, so that it can seize the two edges, which are held together for the purpose. As soon as the unfortunate ant has obtained a firm grip of the cut, its head is severed from its body. Mr. Issigonis, of Smyrna, who described the operation to the Linnæan Society, said that he had seen natives with six or seven ants' heads holding together wounds in the course of healing. A similar observation was made some years ago in Brazil, which fact is interesting from an ethnological point of view, as showing the independent existence of the same custom in countries so far apart as Brazil and Asia Minor.—*Public Opinion.*

THE HYMENOPTEROUS FAUNA OF CEYLON.—At a meeting of the Zoological Society on March :—A communication was read from Lieut.-Col. C. T. Bingham on the hymenopteroas fauna of Ceylon. The paper was founded mainly on the collections made in that island by Col. Yerbury and Mr. E. E. Green, and dealt only with the Monotroehous Hymenoptera, of which 335 species were recorded. Of these seven were now described as new. The author observed that this number was far less than what must actually occur in an island with so varied a climate and flora. Most of the species, as was to be expected, likewise occured in India.—*The Athenæum.*

NOTE THE GROWTH OF CEYLON TEAS.—The total export in 1873 was but 23 pounds; in 1883, 1,665,768 pounds; in 1892, 71,869,465 pounds, and in 1894, 85,000,000 pounds. At one time the staple industry of Ceylon was coffee, and a grand coffee, Lanka, produced by the enterprise and industry of the European planters, cultivated in the mountaion ranges of the interior at from 2,500 to 5,000 feet above sea level. This industry was, however, almost destroyed in the course of a few years by the ravages of a fungoid pest kown as "leaf disease," and the planters at once, with the patient energy and skill characteristic of their countrymen in Ceylon, as elsewhere, set to work to plant their lands with tea. How quickly successfully this done may be gathered from the above results.—*Grocers Criterion,* March 16.

TEA COMPANIES.—Elsewhere we publish the reports of several Tea Companies. With regard to the Panawal Company an interim dividend of 4 per cent was paid in September last, and one is now recommended of 6 per cent, making a total of 10 per cent for the year. It is a satisfactory feature of the balance sheet that close on to £800 is assigned for writing off cost of new extensions and machinery completed during the year, it having been a common practice with some companies in the past to carry such expenditure to the capital account. The estates embrace 1,037¼ acres, of which all but 379½ are under cultivation with tea. The new central factory of the Company is reported to be well-advanced, and the expenditure upon it is to be spread over some two or three seasons. For the half-year ending 30th June last the shareholders of the Rangala Tea Company received an interim dividend at the rate of 8 per cent per annum, and now the directors recommend a further dividend at the same rate. The reports with regard to the result of manuring are very encouraging. The shareholders in the Standard Company are to be congratulated upon receiving a dividend of 15 per cent for the past year and upon the strong position of the concern. Coffee at high prices and a good exchange have been important factors in the favourable result. The shareholders in the Sunygama Company have also to be congratulated. In September last they received an interim dividend of 4 per cent, and now the directors have recommended a final dividend of 8 per cent, the dividend on preference shares for the half-year being at the rate of 6 per cent per annum. In this issue we also quote a report of the Bandarapola Company meeting at which a dividend of 6 per cent for the year was declared. A variety of causes contributed to a decrease in the amount of profit, but the prospects of the crop for the present year seem very good. The first statutory meeting of the Nuwara Eliya Tea Estates Co. was held on the 25th ult. when a full statement was made of the position of the Company by Mr. C. A. W. Cameron who occupied the chair.

## THE TRINIDAD GOVERNMENT STOCK FARM.

The annual report on this institution for the year 1895 has reached our hands, and indicates that it is in a flourishing condition. Unlike our own Government establishment, not only cattle, but also horses and poultry are kept on the farm. The daily stock consisted at the end of the year of 258 animals; 133,308 quarts of milk were supplied to the hospitals and jail; the daily average of cows milked was 73; and the daily yield per cow throughout the year was just 5 quarts. The health of the stock, says the report, was perfect during the year. The stud at the end of 1895 consisted of a stallion, 16 mares in foal, 7 colts and fillies, 3 foals. Says the report:—"During the year 8 foals were born, three of which died from scrofulous anthritis. The foals which died were born in May and June, most rainy months, when it is very difficult to obtain bedding and secure the cleanliness and comfort so necessary to foals in their early days. This points out that a close season is essential, tho period to cover say May to the end of October. There has been no loss when births take place outside these months. No cure is known for the above disease or the exact cause of it." This information is important as the outcome of practical experience, and should be noted by intending breeders in Ceylon. But as regards the stud we are told that the interest in horse-breeding in Trinidad is not keen and is apparently declining so far as the breeding of useful animals is concerned; and this is shown by the fees for stud purposes only aggregating £26 for the year. In connection with the poultry department we read that 17,735 lb. of poultry and 5,798 dozen eggs were purchased for the hospitals Here also there was apparently perfect health, and it would appear that Trinidad enjoys special advantages in the suitability of its conditions for successful stock and poultry farming. The net profit on the entire transactions of the Farm for the year under review was £1,146 or 10 per cent of the capital cost.

## PARA RUBBER IN THE KALUTARA DISTRICT.

An interesting experiment in the cultivation of Para rubber is being made on Halwatura estate in the Kalutara district. About a year ago Messrs. Finlay, Muir & Co. purchased some 50,000 plants which were planted on Halwatura by Mr. Hendry. The trees, we are informed, show a surprising growth and like those on the Government experimental plantation in the same district promise well.

## THE TEA MARKET.

In the tea market business is but partially resumed at firm prices. The extraordinary plethora of money (almost unlendable) and the diminution in the import of staple products at this period of the year should keep market firm, as, indeed, is now the case. Export business is more extended to Russia, doubtless in view of the Coronation festivities. —*L. & C. Express*, April 10th.

## MARKET FOR TEA SHARES.

THURSDAY EVENING, April 9.

The Easter holidays have considerably curtailed business in these shares during the past week, which has been really limited to three working days only. The demand especially for preference shares, still continues, and the prices of this class of share seem likely to go even higher.

MINCING LANE market has not yet opened after the Easter holidays.

CEYLON SHARES.—C. T. P. Co. Ordinary, after changing hands at 28, are now reported buyers at 28¾. Business is said to have been done in the Prefs. at 17½.



Lanka Plantations have been put up in the official list to £5 6s, thus bringing them however, into line only with their actual value.—*Home and Colonial Mail*, April 10.

## LANTANA SCANDENS.

*Lantana Scandens*, or the scandalous lantana, as as one may fairly be permitted to translate it, forms the subject of Commercial Circular No. 4 of 1895, issued by the Reporter on Economic Products to the Government of India. It appears that lantana spread so rapidly in Berar as to threaten the very existence of the forests. In the Annual Progress Report of the Forest Department, Hyderabad Assigned Districts, for 1893-94 the following remarks appear:—"This shrub will grow and rapidly spread at almost any elevation in Berar and in almost any soil. It covers the ground in dense masses, climbs trees to a height of twenty feet, and though it kills all grass, it thoroughly prevents the production of any tree growth. Lantana does not act as a bar to fire: it burns freely in the hot weather and shoots up vigorously from the roots after being burnt over." People who have witnessed lantana on the Western Ghauts will hardly need to be told this, nor yet to learn that it grows so densely as to become perfectly impenetrable by men and cattle *Lantana scandens* or *camara* is one of 40 species, chiefly natives of tropical and sub-tropical America, comprised in a genus of rambling shrubs belonging to the natural order *Verbenaceæ* The history or its introduction into India is curious. Mr. McKee, now a Convervator of Forests in the Central Provinces, but at one time in Coorg, states that some thirty years ago it was brought to that Province in a flower-pot by a Missionary, and used as a hedge plant. But, he adds, "it soon advanced from the hedges to the fields and hill sides and is now so fully established in the province of Coorg that it would be quite impossible even by spending lakhs of rupees to eradicate it." Mr. Prevost, a Forest Officer in Coorg, observes:—"Hundreds of coffee estates have been abandoned owing to lantana." Surely he is confusing cause and effect. We are under the idea that the estates were abandoned before lantana came in. While it is very clear from the correspondence published in this Circular that the Forest Officer must always regard the shrub as an enemy, the evil it does so far outweighing any good it may effect, the planter, on the other hand may under certain circumstances look up on it as a friend. The fact is nowhere disputed that lantana is a wonderful soil-improver. Owing to its shade-giving properties and density it exercises a markedly renovating effect on the land, and by rapidly overgrowing deforested tracts, such as abandoned coffee estates, it serves to retain the humus in the soil. The belief was at one time prevalent that once an estate had been overgrown by lantana, it was thenceforth worthless for cultivation, and surprise was expressed at the way in which tea or coffee throve on land which had been reclaimed from this shrub. We have it on the authority of experts that this success was not fortuitous, but that land becomes valuable from being under lantana for a certain number of years. However there is one bad result alluded to by Mr Dickinson, formerly Conservator of Forests in Coorg but now in Berar, who writes:—"In Coorg, where the plant has spread, the natives say that the country is turning unhealthy and the water is spoiled by it. I myself fully believe this to be the case." His opinion is supported by successive analyses of water taken in Berar when a collecting basin was covered by lantana and at different periods after clearance. Unfortunately, we are not told in what way the growth is detrimental to water, whether by its density encouraging the breeding of the malarial microbe, or in acting directly on the water supply in some manner peculiar to itself. Lantana may be placed in the same class of pests as the prickly pear of the plains, the Australian rabbit and the West Indian mungoose, though it has not yet attained the same proportion of unrestrained evil as any of these, and further it possesses one markedly good point, its power to renovate the soil.—*Madras Mail*, April 22.

## PLANTING AND PRODUCE.

THE MAGNITUDE OF THE INDIAN TEA INDUSTRY.—Mr. O'Conor's statistics on tea cultivation in India, particulars of which we gave in our issue of February 7th, have had the effect of impressing people at home with the importance of the tea planting industry in India. The *Gardener's Magazine* calls the attention of its readers to this. It says: "Tea cultivation forms one of the greatest industries in the India Empire, yet few imagine the enormous areas of land devoted to the tea plant. According to information published by the Revenue and Agriculture Department of the Indian Government, it appears that at the end of 1894 not less than 422,551 acres were planted with tea, the principal districts being Assam, Cachar, Sylhet and Bengal, with smaller areas in the Punjab, Madras, Travancore and Cochin. During the past ten years the area has increased nearly 49 per cent., and during that period the tea produced has increased over 88 per cent. In 1894 383,505 persons were permanently employed on the plantations, in addition to 156,120 others who received employment temporarily. Of the total Indian tea production about 96 per cent. is exported to the United Kingdom. The home consumption of tea in India is estimated at seven million pounds, and of this quantity about two and a half million pounds are foreign produce, although one million pounds of the latter is from Ceylon. Roughly speaking, the Indian consumption per annum is one-fortieth of a pound to each person, while in the United Kingdom the annual consumption per head is from 5¼lb to 5½lb." Taking its cue from the same source, the *Board of Trade Journal* states that the prices of tea in Calcutta have fluctuated greatly since 1873. Taking the price in March, 1873, to be represented by 100. it appears that until 1884 the level was well above that point, varying from 110 to 148. Coincidently with the great fall in exchange and in general prices in 1885 the level fell to 90, and though in 1886 it rose to 96, a low level was maintained in the following years until 1894. In 1895 the level rose to 97. These figures all represent the course of prices of fine Pekoe in January of each year as given by the Bengal Chamber of Commerce. In the Statistical Bureau the average prices of the various descriptions of tea sold at the public sales held in Calcutta during the tea season have been computed for some years past, and the results are regrlarly published in the review of the trade of India.

MORE FIGURES.—The *Gazette of India* contains a note by Mr. O'Conor on tea cultivation in India, which shows that the area under tea is somewhat less than half a million acres, about two-thirds of which is in the Brahmaputra and Surma Valleys—that is, in Assam, Cachar, and Sylhet. The figures given by Mr. O'Conor show that tea cultivation is almost wholly confined to Bengal and Assam, the tea gardens elsewhere being only 7 per cent of the area under tea. At present the cultivation in India is concentrated almost entirely in districts with a damp and equable climate, where repeated pickings are possible. One point brought out clearly by the returns is that for years past there has been no check to the growth of the industry, which annually shows a considerable expansion. Every year since 1885 has seen an increase in the area cultivated, ranging from over 9,000 acres in 1889 to nearly 27,000 acres in 1894; and the percentage of increase is growing. The largest increase of all, Mr. Conor observes, was in 1893 and 1894, "the former of these being the years in which the mints were closed, an event which was regarded by some as the herald of disaster to the tea industry." One table given by Mr. O'Conor shows how completely the tea gardens of India are dependent on the external demand, the consumption of India being trifling in comparison with the whole production. Thus, in 1894 nearly 125 million pounds of tea were produced in India, of which all but 4½ million pounds were exported. If to this be added the amount of Ceylon tea consumed in India—nearly 2½ million pounds—it is seen that the population of India consumes about 7 million pounds a year, or about one-fortieth of a pound per head, or one-hundredth part of the consumption of the United Kingdom. Indeed, if the quantity consumed by the small European population of India, including the army, be deducted, there would not be very much left for the native population. Mr. O'Conor, however, records that the consumption of tea is increasing amongst the native population in the larger towns especially amongst the Mohammedans.

INDIAN TEA IN SOUTH AFRICA.—*Apropos* of foreign markets a gentleman formerly connected with planting in Assam, who has recently returned from South Africa, has been much impressed with the possibilty of establishing a now market for British-grown tea in that part of the world. In a letter addressed to Indian Tea Association he says:—"I have lately returned from that country; and cannot understand how it is that it should not have been discovered as an outlet for British tea before. You have an ever increasing British population in that country, and everything in favour of it becoming a very considerable relief to the London maket. To begin with, you have in South Africa an essentially tea-drinking population, which is the reverse to the American taste, who, I believe, prefer green to black. During my stay in South Africa I had exceptional opportunities for finding out whether tea was really wanted. I have no hesitation in saying that the people of South Africa will only be too glad to get good tea if it is only brought to them, and will pay well for it. But unless it is pushed they will be content to drink the present inferior China and Natal tea or none at all. In Jahannesburg you have a large mining population, and Rhodesia is fast becoming the same, and, as everyone knows, the miner prefers tea to alcohol, and with liquor at the enormous prices it is he will drink more tea if he can get it good."—*H. and C. Mail*, April 10.

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## CEYLON TEA.

(From the *Grocer.*)

At this season of the year it is the custom with some of the leading brokers interested in Ceylon tea to take a review of the trade in that article for the previous eight months, the period for the heaviest shipments to the United Kingdom being nearly over, whilst the time is drawing nigh for much lighter supplies of tea to come forward from that island. From the different statements that have been prepared we gather that the total quantity disposed of in London by auction during 1895 was 950,000 packages, as contrasted with 876,000 packages in 1894, and 834,000 packages in 1893. The equivalent weight of the last year's supply in pounds avoirdupois was about 80,000,000 lb, in comparison with 74,000,000 lb. and 69,000,000 lb. in the other seasons; while the average price obtained was only 8¼d to 8⅜d in 1894 and 1895, and 9½d per lb. in the preceding year. This depreciation in value was, of course, due to a deterioration in the character of the earlier arrivals, which contained a larger proportion of inferior grades than before; and, in the glut that followed the liberal importations of common sorts of Indian teas later on, prices were constantly beaten down to very low points. Where, however, the quality possessed any degree of strength, or was fairly rich in cup, it was sure to command special attention, more particularly so when exporters were in the market as competitors for the higher class descriptions, and medium to fine growths of pekoe and pekoe souchongs went at relatively firm ratos, whilst anything that was exceptionally choice and scarce withal fetched a decided advance.

The most astonishing fact, however, in connection with the industry in Ceylon tea is the rapid and extraordinary rate at which the article has been produced. For it was no longer ago than 1876-78 that the first consignments arrived in this country, and these, too, were very petty, comprising in the three years only about 5,500 lb in all. But in 1881-82 the parcels imported increased to 623,000 lb; again every year afterwards the supply was doubled or trebled, till in 1887-88 it was augmented to 15,614,000 lb; and, leaping forwards with gigantic strides, it reached

34,000,000lb in 1889-90, fully 50,000,000lb in the succeeeding year, above 72 000,000 lb in 1893-94, and ultimately reaching (as estimated) no less than 85,000,000lb for 1895-96. These are enormous amounts, equalled only by the consumption itself, which has foll wed closely upon the heels of production, the deliveries lately averaging about 6,500,000 lb. per month, or 78,000,000 lb. per annum; and the stock on hand at this port now f rms an aggregate of 17,575,000 lb., against 17,482,800 lb. at the end of March, 1895. The quantities of Ceylon tea passing through the United Kingdom for transhipment to places abroad likewise constitute a feature of growing importance to the trade in general. During the year 1895 the total clearances hence without paying duty expanded to 7,093,000 lb., in lieu of 5,124,000 lb. in 1894, and 4,066,000 lb. in 1893. A great proportion of the exports penetrate into remote parts of Russian territory, where the taste for Ceylon tea is being more widely cultivated every year.

With regard to the future Messrs. Geo. White and Co. observe that "The gradual falling-on in the consumption of China Congou, which will possibly be intensified in the near future, should help the sale of British-grown tea as the demand for the colonies and America, as well as Russia and other places, is steadily expanding, consequent on the persistent efforts made to that end in those countries under the auspices of both the Indian and Ceylon Tea Associations. Without such aid production bids fair to outstrip consumption, as is already the case with some other articles from the East. The unsatisfactory results of Calcutta and Colombo purchases, especially where they have been held over, are in a measure attributable to the non-keeping qualities of a large portion of the year's shipments—more apparent in the produce of an unfavourable season than when the liquor is rich and full in flavour. Invoices printed on 'importers' account' do not, in busy times, receive the same attention from London buyers as direct shipments from the gardens, and as purchasers often only taste the latter, the question of having a separate time for the sale of these has been mooted. In the event, therefore, of an increasing output in the chief producing countries, it will be desirable, if possible for attention to be directed to the make of choice descriptions, with the special characteristics for which certain districts have already secured a reputation." The power to push and extend the sale and consumption of Ceylon tea undoubtedly rests with the London buyers, who have a motive for searching out new market when the supply is greatly in excess of the immediate requirements of the home trade.—*H. & C. Mail*, April 15.

## THE GRIEVANCES OF THE COFFEE TRADE.

Last week there was a meeting of importers, exporters, home trade dealers, and brokers connected with the coffee trade held at the Commercial Sale Rooms, Minicing Lane, London, to consider a memorial which it is proposed to send to the Chancellor of the Exchequer (Sir Michael Hicks-Beach, M.P.) on the subject of formulating a system for the better working of coffees in bond. Mr. Robert Wales (Messrs. Moffatt and Co.) presided, and amongst those present were Messrs. G. Rouse (R. J. Rouse and Co.), chairman of the Coffee Brokers' Association, Brown (Carey and Brown), J. A. Davies (Peek Bros and Winch, Ltd.), Keeble (J. Travers and Sons, Ltd.), Boyes (E. Boyes and Co.), Asser (Asser and Co.), and J. C. Sanderson (Sanderson and Co.), hon. sec.

The Chairman said a fortnight ago those interested in the trade met and formed a committee to draft a memorial to be sent to the Chancellor of the Exchequer in regard to the objects which they had in view. The considerations which guided them in drawing up the memorial were that they should be brief and practical, and that the views they held should be put before the Chancellor of the Exchequer in the best possible way. But what they urged very strongly was the abolition of the duty as the most effective method of doing away with the difficulties which at present existed in the trade.

Mr. Sanderson then read the draft of the memorial proposed to be sent to the Chancellor of the Exchequer, as follows:

"In your reply to the deputation which waited upon you at the House of Commons on February 27th last, you stated that you were willing to consider any suggestion the coffee trade wished to put forward for a rearrangement of the present system of working coffees in London. In order to ascertain the general wishes of the trade, a meeting was held at the London Commercial Sale Rooms on Thursday, March 12, when the following resolution was unanimosly carried:—'That a Committee of importers, exporters, home trade dealers and brokers be formed with the object of formulating a system for the better working of coffees in bond, and that the Committee do report to a general meeting of the trade the result of their deliberations, prior to placing it in the hands of the Chancellor of the Exchequer for Consideration.

"The committee appointed was as follows: Mr. Oscar Schwartz, representing Messrs. F. Huth and Co.; Mr. Ed. Landsberg, representing Landsberg and Co.; Mr. Robert Wales, representing Moffatt and Co.; Mr. J. A. Davies, representing Peek Brothers and Winch, Ltd.; Mr. Geo. Rouse, representing R. J. Rouse and Co.; Mr. E. A. Rucker, representing I. A. Rucker and Bencraft; Mr. J. C. Sanderson, representing Sanderson and Co.; Mr. Julius Ehemann, representing Edmund Schluter and Co.

"This report has been drawn up and approved by the trade; it is now placed in your hands, and your petititioners trust that you will give it a favourable consideration. Our present system of handling coffee is an antiquated one, suitable perhaps to the conditions of trade current years ago, before the opening of the Suez Canal, when coffee arrived in sailing vessels, before cost and freight and arrival business were in vogue, and when London as an *entrepot* was on the up-grade, and not subject to severe competition. No individual in the coffee trade can remember the the period at which our present system, with its restrictions, became inaugurated, so antiquated is it. The following figures show how the coffee trrde of the United Kingdom has declined during the last twenty-seven years: The total imports into Europe from all countries in 1879 was 337,654 tons, of which 77,416 tons came to the United Kingdom; in 1888 (the year the Emancipation Act in the Brazils was passed) the European imports were 381,700 tons, of which 47,700 tons came to the United Kingdom, while in 1895 European imports had increased to 490,800 tons, and the United Kingdom imports had fallen to 38,800 tons; or, in other words, in 1869 our imports were about 23 per cent of the total European imports; in 1888 they had fallen to about 13 per cent; while in 1895 they were only about 8 per cent.

"Your petitioners state that the present system of working coffee by the Customs is as follows:—1. Coffee is landed, bulked, and weighed under the eye of the Custom House officer. The last operation is done after the package is closed up, and any weight over the even pound is not taken account of, thus the importer usually suffers a loss in weight, which, with a change of system, may be avoided. 2. As each import is kept by the rotation number of the ship, with marks, piles, and numbers, the Customs will not permit an importer to mix together lots of similar quality and marks (unless they are imported in the same ship), either at the time of landing or afterwards, without petitioning the Customs, which operation entails serious delay, and is too costly, especially in the case of small parcels.

"As regards the necessity for facilities, we point out that the tendency is for coffee to arrive less and less in a condition for the roaster; that in the Brazils, since the abolition of slavery in 1888, the huge crop, averaging 400,000 tons of coffee, of which we get the absurdly small portion of about 5,000 to 8,000 tons, comes in a far less prepared state than it was wont to do, and that from other countries partly

owing to labour difficulties, the tendency is markedly in the same direction.

"It is, therefore, necessary to apply a free port principle to the London docks and wharves, because our arrivals, Germany, France, Belgium, Holland, Austria, &c., are placed as follows:—Germany: Hamburg, a free section of the port adjoining the Elbe, where the Custom House official has no *locus standi*. In Germany certain firms in the interior are given every possible facility, coffees in their own warehouses being still in bond. France: Differential duties against all European competitors and ports, subsidised steamer lines, the producing countries and New York being the favoured place, Bringing in New York as not subject to the differential duty is clever. In France the ports become practically free, because a shipper sending his coffee there secures all options of other ports, and yet saves the differential duty if it eventually suits him to sell his produce in France. Belgium: Antwerp, coffees invoiced in and invoiced out of warehouses without any reference to ships, marks, packages, &c. Stocks taken at intervals, on notice being previously given, the warehouse keeper being subject to a fine of ten times the ordinary duty on any weight of coffee missing. What a wise action on the part of the Belgian Government, as otherwise the whole trade would have gone to Holland: No duty. Austria Trieste, practically a free port.

"We would therefore humbly suggest: (*a*) That the import or the owner should have facilities, so as to handle coffee in any way he may desire, in order to put it before the buyer in a condition agreeable to each special market and each special buyer. (*b*) That he should be allowed to dry, pick, bulk, or mix, blend, and polish coffee in the same manner as owners can in Continental ports. (*c*) That he should be able to roast, grind and pack any quantity in bond, with the option of using it either for export or for home consumption. (*d*) That all packages should be weighed to an even pound, and closed up after the weight is taken. (*e*) And that the system of taring should aim at giving, as near as possible, the actual tare of a package.

"In fact, the owner of the coffee should have absolute freedom in handling and working, either in the public docks or private warehouses owned by firms of repute, such firms to give guarantees or a bond for the due fulfilment of carrying out what they undertake. The committee recommend that the Antwerp system should be adopted.

"In England, especially in London, there has existed for many years a policy of *laisser faire*, but we maintain that abroad the greatest interest is evinced by the different Governments in the various trades with very beneficial results.

"In London we have cheaper money than anywhere else, and many things are more favourable than on the Continent for developing business, but we find our port is nevertheless decreasing rapidly as an *entrepot*, and we believe that as our market becomes smaller our home trade will be forced to buy in the Continental markets, and will eventually die a natural death.

"Take away the local market and, in our opinion, the consumption will further decline; we shall then require no facilities, and the Exchequer will suffer accordingly. Your petitioners, therefore, pray you will grant them the facilities asked if you still find it impossible to abolish the duty."

Mr. Keeble asked whether it was proposed to benefit the home trade or the export trade.

The Chairman replied that the object they had in view was to benefit the export and import and the home trade; therefore, they desired to do what was for the advantage of the whole trade.

A discussion took place on the question of over-weights, which Mr. Boyes averred went somewhere. but did not reach London, and also on the subject of the tare, and on the suggestion of Mr. Keeble the paragraph (*e*) in the memorial dealing with the latter was left out.

Mr. Asser said it was the practice of the Customs authorities to put weights against the sample of coffee which was taken out, and the buyer had to suffer the less occasioned thereby. He thought the bags ought to be weighed after the sample w taken out.

Mr. Rouse said that the question raised by M Asser was one of the questions involved in t statement which they had laid before them. The trade as a whole suffered from certain grievances, and something must be done to remedy them if possible. These grievances were capable of settlement, and their object was to arrange a conference between persons acquainted w'th the coffee market and the Chancellor of the Exchequer on the various matters affecting the trade, with a view to their being thoroughly threshed out.

The Chairman said their main idea was to abolish the duty on coffee, but if they could not do that, to benefit the whole trade by improving its working.

It was resolved to add to the memorial the suggestion that all packages should be weighed after the sample was taken.

On the motion of Mr. Asser, seconded by Mr. Brown, it was unanimously resolved that the memorial should be forwarded with the alterations made.—*H. & C. Mail*, April 10

## KELANI VALLEY TEA ASSOCIATION, LIMITED.

The tenth ordinary general meeting of the Kelani Valley Tea Association, Limited, was held at the offices of the company, 16, Philpot Lane, E C., on Wednesday, April 8, 1896, at 3 p.m., the chairman (Mr. G. W. Paine) presiding.

Notice convening the meeting having been read, and the report and accounts having been taken as read, the Chairman, in the course of a few remarks, said that with regard to the new clearings 16 acres had been planted on Degalessa during the past year, and 65 acres of jungle had been felled, and would be planted up during this year. On Parusella 18 acres had been planted last year, and 12 acres were felled and burnt off this year.

The Chairman then gave particulars of the company's investments amounting to £3,000, and he said the shareholders would no doubt be glad to hear that their investments were today valued at £3,256. They would also be pleased to notice that they had been able to pay off he mortgage for £4,000 over Wereagalla on which 7 per cent interest was paid, and therefore the item of £280 for interest on mortgage would disappear from next accounts. With regard to the item "Sundry receipts in Ceylon," a small portion of the amount was derived from profits on rice supplied to the coolies, but the directors had agreed in future to sell the rice to the coolies at as near as possible cost price, instead of making a profit on the transaction as had been the case in the past, which would doubtless be appreciated by the coolies, and approved of by the shareholders. In profit and loss account there was a nominal increase of £48 19s 2d in "general charges," but the item of £508 17s 1d included the honorarium of £100 paid to the directors last year. The Chairman then gave details of the charges making up the amount named. The Chairman mentioned that the £2,000 placed to "special account" was treated in this way under the advice of the auditor, the money used in paying the mortgage already referred to having been for the present taken out of the immediate resources of the company, The 6 per cent debentures were rapidly falling in. there being only £850 bearing 6 per cent current, of which £600 expires on July 1 next, and £250 on January 1st. 1897. Those that expired during the past year had been renewed for a further period of three years at 5 per cent.

No questions being forthcoming, the Chairman then proposed: that "the reports and accounts as presented to the shareholders be received and adopted." The resolution was seconded by Mr. L. F Davies, and carried unanimously.

Mr. G. W. Paine, seconded by Mr. D. Andrew, (proposed, "That a final dividend of 10 per cent free of income tax), making 15 per cent for the year, and a bonus of 2½ per cent for the year (also free of income tax) be declared payable forthwith."—Carried unanimously.

It was proposed by Mr. L. F. Davies and seconded by Mr. D. Andrew:—"That Mr. D. A. C. Scott be re-elected a director of the company."—Carried unanimously.

On the motion of Mr. J. W. Stocks, seconded by Mr. C. J. Scott, Mr. J. B. Laurie, C. A., was re-elected auditor for the ensuing year.

Mr. Paine moved a vote of thanks to the Ceylon and London staffs for their efficient working of the company's properties and business and commented on the high efficiency of both, which of course tended in a great measure to the successful position the company was now in. Seconded by Mr. C. B. Slee and carried with acclamation.

Proposed by Mr. Slee, seconded by Mr. W. W. Lord, and carried unanimously, "That a vote of thanks be and is hereby given to the chairman and directors of the company."

The vote of thanks was acknowledged by the Chairman on behalf of himself and his co-directors, and during his remarks it was suggested, and Mr. Slee proposed, "That a sum of £150 be given to the directors as an appreciation of their services."

This was seconded by Mr. J. W. Stocks, and carried.

The proceedings then terminated.—*H. and C. Mail*, April 10.

## CEYLON TEA PLANTATIONS COMPANY, LIMITED.

### ANNUAL REPORT.

Report of the Directors to be submitted at the ninth annual ordinary general meeting of shareholders to be held at Winchester House, Old Broad Street, E.C. on Thursday, 23rd April 1896.

The Directors have the pleasure to submit the general balance sheet and profit and loss account for the year ending 31st December 1895, duly audited.

| | £ s. d. | £ s. d. |
|---|---|---|
| The net amount at Credit of Profit and Loss Account, including Balance brought forward at 31st December 1894, and after providing for General Expenses, Directors' Fees, Income Tax, &c. is .. .. | | 53,552 2 1 |
| An interim Dividend of 7 per cent on the Ordinary Shares was paid 28th October 1895, amounting to .. | 11,716 12 0 | |
| It is proposed to pay a final Dividend of 8 per cent on the Ordinary Shares (making 15 per cent in all, free of Income Tax) which will absorb .. .. | 13,390 8 0 | |
| Dividends on the 7 per cent Preference Shares were paid for 1895 (less Income Tax), amounting to .. .. | 5,486 17 6 | |
| It is proposed to add to Reserve Fund .. | 19,291 19 2 | |
| It is proposed to write off for Depreciation .. | 2,000 0 0 | |
| And to carry forward to next year a balance of | 1,666 5 5 | |
| | | 53,552 2 1 |

For the ninth year of the Company's existence the Directors have pleasure in being able to declare a dividend of fifteen per cent on the ordinary shares.

It will be observed the Directors propose after writing off for depreciation the sum af £2,000, to carry to Reserve £19,291 19s 2d, and, with the addition of £708 0s 10d derived from profits on sale of investments during the year, this Fund will then amount to £70,000.

The yield of tea per acre was 437 lb. over a plucking area of 8,073 acres, as against 372 lb. for the previous year, being the highest average yie tained since the formation of the Company.

The gross price realized for the Company's [illegible]as was 8·09d per lb. as against 8·84d in 1894, and [illegible] rate of exchange during the year was 1s 1 15-32d as against 1s 1 9-16d.

The crop for the year was as under:—

| Estate Tea. | Bought Leaf Tea. | Tea Manufactured for others. | Total. |
|---|---|---|---|
| lb. | lb. | lb. | lb. |
| 3,530,737 | 665,603 | 1,110,564 | 5,306,904 |

The following is the acreage of the tea estates at 31st December 1895:—

| | Acres. |
|---|---|
| Tea in bearing .. .. | 7,955 |
| Tea not in bearing .. .. | 221 |
| Timber clearings, forest and waste | 2,154 |
| Total .. | 10,330 |

Subjoined are the acreages of the four coconut properties acquired by the Company as an investment for part of the Reserve Fund:—

| | Acres. |
|---|---|
| Coconut trees in bearing .. | 340 |
| Do not in bearing .. | 904 |
| Liberian Coffee do .. | 43 |
| Forest and waste .. .. | 946 |
| Total .. | 2233 |

The Balgownie estate of 118 acres tea and 203 acres of forest was disposed of as it did not suit the Company to hold this property.

The estates have been maintained in excellent condition throughout the past year, and from latest reports are likely to yield good returns for the current year.

The Directors again desire to record their great satisfaction with the manner in which the Ceylon manager and his staff have carried on the business of the Company during the past year, and with the results which their labours have so materially assisted to bring about.

Under clause No. 69 of the Articles of Association, Mr. H. K. Rutherford retires on this occasion from the Board, and being eligible, offers himself for re-election.

The Auditors, Messrs. Harper Bros., Chartered Accountants, also retire from office, and offer themselves for re-election.—By order of the Board,

WM. JOHNSTON, Secretary.

London, 11th April 1896.

THE CULTIVATION OF THE ORANGE is, it is stated, about to be tried in Ceylon, and should this prove successful, the capital of the island has all the advantages of regular fast lines of steamers, so that within a few years there is no reason why this flourishing British colony should not supply the English markets with oranges. As Jamaica is at the same time endeavouring to arrange for exporting oranges to this country, the outlook, from the consumer's point of view, is decidedly hopeful. The orange is a great favourite in this country already, and both Ceylon and Jamaica are certainly well favoured for the growth of the right sorts of this delicious fruit.—*Fruit Grower*, March 25.

DEAFNESS. An essay describing a really genuine Cure for Deafness, Ringing in Ears &c., no matter how severe or long-standing, will be sent post free.—Artificial Ear-drums and similar appliances entirely superseded. Address THOMAS KEMPE, VICTORIA CHAMBERS, 19, SOUTHAMPTON BUILDINGS, HOLBORN; LONDON.

## OUR TEA CONSUMPTION.

A REMARKABLE CHANGE.

In a bulky Blue-book just issued, giving a statement of the trade of British India for the past five years, some interesting figures are published concerning the British consumption of Indian and China tea. The United Kingdom, it is stated, continues to be the great market for Indian tea, as much as 92 per cent of the exports of the year having been shipped thither. Of the small quantity not shipped to the United Kingdom, Australia takes a considerable but unfortunately not an increasing share; Indian tea seems to make no headway in the colonies in competition with China and Ceylon tea. Persia during the last four years has been taking larger quantities. As regards the trade with Persia Her Majesty's Consul at Bushire writes in his report for 1894:—"There has been a strong demand thoughout the year for Indian and Batavian teas, which seem to be steadily supplanting the China teas in favour with the Persian consumer. Heavy consignments, chiefly from India, were received by native merchants who found no difficulty in disposing of them at a good profit. It was, however, at the port of Bandar-Abbas that this trade received its most vigorous impulse, the import being more than double that of the previous year." Some of the tea at any rare imported into Bandar-Abbas was destined for consumption in Russian Asiatic territory, and it seems probable that the effect of recent fiscal arrangements, of the Russians will divert the transit trade to Batoum and the Trans-Caspian Railway. A new feature in the trade of the year is the largely increased export to Asiatic Turkey, and it is to be hoped that the exports to this country may become larger. Exports to the United States and Canada have also developed very greatly, though the aggregate is still relatively trifling. A good deal has been said in trade reports from China of the gratifying revival in the tea trade which marked 1894, and it seems that the quantity exported was slightly larger than it had been in the preceding year. China tea, however, has not succeeded in competing with Indian tea in that great market, the United Kingdom, which takes more than nine-tenths of our tea and nearly as much of Ceylon tea. Steadily and surely, year by year since 1886, the importation of China tea into England has fallen and that of Indian has increased, until last year close on three pounds of Indian tea were imported for every pound of China. This latter tea still retains its hold of the Australian and American markets where quality in tea is hardly yet appreciated except by a select few, and where Indian tea consequently has not been able to find its way in considerable quantity. Even the closing of the mints seems to have had no effect at all in stimulating the competition of the Chinese in the market for our tea, though it was freely prophesied that that measure would blast and ruin the Indian industry and restore Chinese ascendency.—*Globe*, April 10.

## TEA IN AUSTRALIA.

In China tea sales have been made of 650 half chests panyong at 4½d to 5d, 180 half-chests panyong at 6d, 300 quarter-chests buds at 5d to 5½d, and 300 quarter-chests S. O. Pekoe at up to 6½d. Of Ceylons 200 chests have been placed at 6d to 11d, and of Indians 100 chests at 8d to 10d.—*Australasian*, April 11.

A NEW GERMAN COLONIAL UNDERTAKING.—A new colonial undertaking has been launched at Berlin for the establishment of cocoa plantations in Cameroon and for the exploration of the rich guano fields in the Portuguese Province of Regola, principally in Mossamedes. The well known German African traveller, Dr. Lintgraff, together with the leaders of the new undertaking, Drs. Esser and Hosch, are to leave Germany within a few days for the Portuguese Island St. Thome, opposite Cameroon, to study the climate and other necessaries, whence they will leave for Cameroon and the backlands to investigate the question of providing the necessary labourers. —*L & C Express*, April 10.

## INDIAN TEA SALES.

(*From William Moran & Co.'s Market Report.*)

CALCUTTA, April 22nd, 1896.

TEA.—Advices from Assam are generally favorable; while from Cachar we hear of further storms accompanied by hail. Terai planters report good rain in the last few days. There was a good shower about Darjeeling last week, but the gardens are again very dry. More rain is badly wanted in the Dooars.

A few invoices of New Season's teas have arrived, and some have gone forward to London. From the garden musters received, we are inclined to think the general quantity will be better than the first of last year's teas.

We are favored with the following by the Indian Tea Association:—

The General Committee have now the pleasure to hand you the following figures showing an estimate of the Indian tea crop of 1896.

ORIGINAL ESTIMATE OF CROP, 1896

| | lb. |
|---|---|
| Assam .. .. | 59,039,263 |
| Cachar .. .. | 19,519,860 |
| Sylhet .. .. | 23,834,680 |
| Darjeeling .. .. | 8,384,760 |
| Terai .. .. | 3,103,400 |
| Dooars .. .. | 21,225,560 |
| Chittagong ... .. | 787,200 |
| Chota-Nagpore .. | 238,800 |
| Kangra .. .. | 2,170,000 |
| Dehra Dun and Kumaon (Estimate).. .. | 2,000,000 |
| Private and Native Gardens (Estimate).. ... | 4,000,000 |
| | 144,303,523 |

being 8,824,461 lb. over the actual outturn of the crop of 1895. Estimating shipments to the Colonies and other ports with local consumption at 16 millions. (or say 2 millions more than last year), there will remain about 128¼ million lb. for export to Great Britain:

*P.S.*—Since the estimates from the various districts were drawn up, there have been severe hailstorms in Cachar and excessive draught in Darjeeling, the Terai and the Dooars which may have an appreciable effect on the outturn. The above estimate of the crop for 1896 should, therefore, be considered a full one.

TOTAL QUANTITY OF TEA PASSED THROUGH CALCUTTA FROM 1ST TO 20TH APRIL.

| | 1896. | 1895. | 1894. |
|---|---|---|---|
| Great Britain | 49,099 | 140,807 | 155,909 |
| Foreign Europe | 100 | 2,350 | Nil |
| America | Nil | Nil | 1,000 |
| Asia | 32,069 | 26,201 | 30,301 |
| Australia | 9,720 | 5,120 | 280,702 |
| | 90,988 | 174,478 | 467,912 |

CHAFED SKIN, PILES, SCALDS, BRUISES, CUTS, STINGS, NEURALGIC and RHEUMATIC PAINS, SORE EYES, EAR-ACHE, THROAT COLDS, and SKIN AILMENTS quickly relieved by use of CALVERT'S CARBOLIC OINTMENT. Large Pots 13½d. each (English rate.) Sold at Chemists, Stores, &c.

F. C. CALVERT & CO., Manchester.

## COLOMBO PRICE CURRENT.

*(Furnished by the Chamber of Commerce).*

Colombo, April 27, 1896.

EXCHANGE OF LONDON: CLOSING RATES, *Bank Selling Rates*:—On demand 1/2¼; 4 months' sight 1/2 5-32; 6 months' sight 1/2 3-16. *Bank Buying Rates*:—Credits 3 months' sight 1/2 9-32 to 5-16; 6 months' sight 1/2 5-16 to 11-32. Docts. 3 months' sight 1/2 5-16 to 11-32; 6 months' sight 1/2 11-32 to ⅜.

COFFEE.—Plantation Estate Parchment on the spot per bushel, R14 to 16 50.—Very scarce. Estate Crops in Parchment, delivery, per bushel, no quot. Plantation Estate Coffee, f.o.b. on the spot per cwt, R78 00 to 83.—Very scarce. Liberian parchment on the spot per bushel, R12.—Very scarce. Native Coffee f.o.b. per cwt. R61 to 62.—Very scarce.

TEA.—Average Prices ruling during the week: Broken Pekoe, per lb 49c. Pekoe per lb 43c. Pekoe Souchong, per lb 33c. Broken mixed and Dust, per lb 25c.—Averages of Wednesday's sale.

CINCHONA BARK.—Per unit of Sulphate of Quinine, per lb 1½c. to 3c.—1 to 4 %. Twigs and branch no quotation.

CARDAMOMS.—per lb R1·00 to 2·00.

COCONUT OIL.—Mill oil per cwt. R15·18. Dealer's oil per cwt. R15. Coconut oil in ordinary packages f.o.b. per ton R37·50.—Nominal.

COPRA.—Per candy of 560 lb R42 00 to R49·00

COCONUT CAKE: (Poonac) f.o.b. per ton, R55 to 65.

COCOA.—Unpicked and undried, R30 to 38

COIR YARN.—Nos. 1 to 8 { Kogalla per cwt. R9 to 18. Col. side ,, R7 to 14.

CINNAMON.—Nos. 1 & 2 only f.o.b. 63½c.

Ordinary Assortment, per lb 60½c.

PLUMBAGO: Large Lumps per ton, R150 to 330. Ordinary Lumps per ton, R130 to 290. Chips per ton, R80 to 140. Dust per ton, R30 to 90.

EBONY: per ton.—Govt. sales on 11th proximo.

RICE.—Soolye per bag, R6·75 to R7·90.
Pegu and Calcutta Calunda per bag R7·75 to R8·05
Coast Calunda per bushel, R2·85 to R3·20.
Muttusamba per bushel, R2·85 to R3·60.
Kadappa and Kuruwe per bushel,—no quotations.
Rangoon Raw 3 bushel, bag, R9·00.

FREIGHTS.

| Cargo. | Per ton London per str. s. d. | N. York per str. s. d. | Trieste per str. s. d. | Mar'lles per str. s. d. | Hamb', Bremen &c. s. d. |
|---|---|---|---|---|---|
| Tea | 25/ | 37/6 | 25/ | 25/ | 15/ |
| Coconut Oil | 25/ | 37/6 | 25/ | 25/ | .. |
| Plumbago | 25/ | 37/6 | 25/ | 25/ | .. |
| Coconuts in bags | 25/ | 37/6 | 25/ | 25/ | .. |
| Other Cargo | 25/ | 37/6 | 25/ | 25/ | .. |
| Broken Stowage | 12/6 | .. | .. | .. | .. |
| SAILERS. | | | | | |
| Coconut Oil | .. | 32/6 | .. | .. | .. |
| Plumbago | .. | 32/6 | .. | .. | .. |

New York rates per steamer with transhipment 12/6 @ 15/ above London rates.

## LOCAL MARKET.

*By Mr. A. M. Chittambalam, 7, Baillie St., Fort.*

Colombo, April 28, 1896.

Garden Parchment :— R14·00 to 14·50 per bushel
Chetty do :— 15·00 to 15·50 do
Native Coffee :— 55·00 to 57·00 per cwt
do f.o.b. :— 62·00 to 63·00 do
Liberian Parchment, 12·00 per bushel (nominal
do Coffee, 60·00 to 62·00 per cwt
CARDAMOMS.— 0·70 to 1·75 per lb (nomina
COCOA.—(nominal) 30·00 to 38·00 per cwt do
RICE.—Market Steady:—
Kazla R6·50 to 6·75 per bag
Soolye 7·00 to 7·75 do
Callunda 7·75 to 8·00
Coast Callunda 2·87 to 3·00 per bushel
Kuruve 2·75 to 2·87 do
Muttusamba (new) 3·00 to 3·25 do
CINNAMON.—Quoted Nos. 1 to 4, at 63c and Nos. 1 and 2 at 66 cents per lb (nominal)
CHIPS.—R75·00 per candy (nominal)
COCONUTS.—Ordinary R35·00 to 38·00 per 1,000 (nominal)
do Selected 40·00 to 43·00 do do
COCONUT OIL.— 15·12 to 15·37 per cwt do
COPRA.—Market steady:—
Kalpitiya R48·00 to 48·75 per candy
Marawila 47·00 to 47·50 do
Cart Copra 43·00 to 45·00 do
POONAC.—Gingelly 75·00 to 80·00 per ton
Chekku 100·00 to 105·00 do
Mill (retail) 70·00 to 80·00 do
EBONY.—quotations at R100 to R185 (nominal)
SATINWOOD.—cubic feet 1·50 to 2·12 do
HALMILLA.— do 1·25 to 1·50 do
KITUL FIBRE.—Quoted at R30·00 per cwt (nominal)
PALMYRA FIBRE.—Quoted nominally:—
Jaffna Black.—Cleaned (Scarce)
do Mixed R17·00 to 18·00 per cwt.
Indian do R7·00 to 9·00 do
Do Cleaned 10·00 to 14·00
SAPAN WOOD.—Quoted 55·00 to 60·00 per ton
KEROSINE OIL—American 7·25 to 7·30 per case*
do Russian 3·03 to 3·08 per tin
KAPOK.—Cleaned f. o.b :— (Scarce)
do Uncleaned do
Croton Seed 13·00 to 17·00 do
Nux. Vnomica 2·50 to 3·00 per cwt
* A Shipment has arrived this week.

## CEYLON EXPORTS AND DISTRIBUTION 1895-1896.

| COUNTRIES. | Coffee cwt. Plantation | Coffee cwt. N'tive | Coffee cwt. Total. | Cinchona. 1896 B'nch & Trunk lb | Tea 1896 lb. | Tea 1895 lb. | Cocoa cwt. | C'moms lb. | Cinnamon. Bales lb. | Cinnamon. Chips lb. | Coconut Oil 1896 cwt. | Coconut Oil 1895 cwt. | P'bgo. 1896 cwt. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| To United Kingdom .. | 4140 | 5 | 4145 | 253403 | 20831004 | 25710594 | 14004 | 32319 | 239352 | 114109 | 29916 | 50147 | 32889 |
| ,, Austria .. .. | 479 | .. | 479 | .. | 2295 | 1550 | .. | .. | 1300 | 5600 | 10425 | 5157 | .. |
| ,, Belgium .. .. | .. | .. | .. | .. | 3440 | 1056 | .. | .. | 11200 | 40488 | 904 | 204 | 3167 |
| ,, France .. .. | 455 | .. | 455 | .. | 16785 | 5921 | .. | .. | 23100 | 3500 | .. | . | 447 |
| ,, Germany .. .. | 553 | 6 | 559 | .. | 32795 | 45187 | 460 | 29207 | 115009 | 116102 | 2744 | 4841 | 9775 |
| ,, Holland .. .. | .. | .. | .. | .. | 1845 | 2710 | .. | .. | .. | .. | .. | .. | 501 |
| ,, Italy .. .. | 6 | .. | 6 | 832 | 1231 | 3413 | 6 | .. | 22400 | 25200 | 103 | .. | 264 |
| ,, Russia .. .. | 59 | .. | 59 | .. | 159597 | 70528 | .. | .. | .. | .. | 26 | .. | .. |
| ,, Spain .. .. | .. | .. | .. | .. | 19140 | 11500 | .. | .. | 36830 | 2520 | 208 | .. | .. |
| ,, Sweden .. .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| ,, Turkey .. .. | .. | .. | .. | .. | 5562 | 1360 | .. | .. | .. | .. | .. | .. | .. |
| ,, India .. .. | 210 | .. | 210 | 1379 | 354321 | 157083 | 2 | 54214 | .. | .. | 12453 | 321 | 199 |
| ,, Australia .. .. | 1307 | 183 | 1490 | .. | 3446709 | 2490371 | 29 | .. | 4200 | 4368 | 324 | 587 | 251 |
| ,, America .. .. | 81 | .. | 81 | .. | 90907 | 118636 | .. | .. | 70000 | .. | 9513 | 32975 | 56413 |
| ,, Africa .. .. | .. | .. | .. | .. | 39634 | 15348 | .. | .. | .. | .. | .. | .. | 502 |
| ,, China .. .. | 20 | .. | 20 | .. | 40075 | 78082 | .. | 200 | 10000 | .. | 1623 | .. | .. |
| ,, Singapore .. .. | .. 3 | .. | .. 3 | .. | 31751 | 7299 | 95 | .. | .. | .. | 15440 | 4991 | .. |
| ,, Mauritius .. .. | .. | .. | .. | .. | 2490 | 40903 | .. | .. | .. | .. | .. | .. | .. |
| ,, Malta .. .. | .. | .. | .. | .. | 33300 | 13295 | .. | .. | .. | .. | .. | .. | .. |
| Total exports from 1st Jan. to 27th April. 1896 | 7314 | 194 | 7508 | 255614 | 31112881 | | 14596 | 115940 | 533391 | 311887 | 83679 | | 104408 |
| do 1895 | 22994 | 918 | 23912 | 259486 | 26885860 | | 13730 | 150452 | 461845 | 216084 | 86230 | | 57392 |
| do 1894 | 8060 | 85 | 8145 | 697728 | 24087243 | | 7789 | 112519 | 415550 | 96682 | 93577 | | 75314 |
| do 1893 | 23366 | 1035 | 24401 | 1627992 | 23453420 | | 16069 | 151664 | 431596 | 219876 | 107929 | | 170639 |

## MARKET RATES FOR OLD AND NEW PRODUCTS.

*(From Lewis & Peat's Fortnightly Prices Current, London, 25th March, 1896.)*

| | QUALITY. | QUOTATIONS. |
|---|---|---|
| ALOES, Socotrine ... | Fair to fine dry ... | 44s a 100s |
| Zanzibar & Hepatic | Common to good ... | 11s a 76s |
| BEES' WAX, | | |
| Zanzibar & Bombay { White... | Good to fine ... | £7 a £8 |
| Yellow... | Fair .. | £6 12/6 a £7 |
| Mauritius & Madagascar.. | Dark to good palish .. | £6 10s a £7 |
| CAMPHOR, China ... | Fair average quality ... | 180s |
| Japan .. | ,, ,, ,, .. | 195s |
| CARDAMOMS, Malabar.. | Clipped, bold, bright, fine | 1s 1d a 2s 4d |
| | Middling, stalky & lean | 1s 5d a 1s 9d |
| Ceylon.—Mysore ... | Fair to fine plump .. | 1s 9d a 3s 6d |
| | Seeds ... | 3s a 3s 2d |
| ,, Tellicherry... | Good to fine ... | 1s 8d a 2s |
| | Brownish .. | 1s 3d a 1s 8d |
| ,, Long ... | Shelly to good ... | 1s 6d a 3s |
| ,, Mangalore.. | Med brown to good bold | 2s 2d a 3s 9d |
| CASTOR OIL, Calcutta.. | 1sts and 2nds ... | 2⅛d a 2⅜d |
| Madras .. | 1sts and 2nds ... | 2⅛d a 2¼d |
| CHILLIES, Zanzibar ... | Dull to fine bright ... | 25s a 32s 6d |
| CINCHONA BARK.— | | |
| Ceylon ... | Ledgeriana Chips ... | 2d a 3½d |
| | Crown, Renewed .. | 2d a 4½d |
| | Org. Stem . | 1¼d a 3d |
| | Hybrid Root ... | 2¼d a 2½d |
| | Chip ... | 1¼d a 2d |
| CINNAMON, Ceylon 1sts | Ordinary to fine quill... | 10½d a 1s 4d |
| 2nds | ,, ,, ... | 10d a 1s 3d |
| 3rds | ,, ,, ... | 9¼d a 1s 1d |
| 4ths and 5ths | Woody and hard .. | 8¾d a 9¼d |
| Chips | Fair to good .. | 3d a 3⅜d |
| CLOVES, Penang .. | Dull to fine bright bold | 7d a 11d |
| Amboyna .. | Dull to fine .. | 3¼d a 4¾d |
| Zanzibar and Pemba } | Good and fine bright .. | 2⅜d a 2½d |
| | Common dull to fair ... | 1⅞d a 2¼d |
| Stems .. | Fair .. | 1d |
| COCULUS INDICUS ... | Fair .. | 7s a 7s 3d |
| COFFEE ... | | |
| Ceylon Plantation.. | Bold to fine bold colory | 114s a 122s |
| | Midding to fine mid .. | 102s a 112s |
| | Low mid. and low grown | 95s a 100s |
| | Smalls ... | 93s a 97s |
| Native ... | Good ordinary ... | 85s a 95s |
| Liberian ... | Small to bold ... | 78s a 85s |
| COCOA, Ceylon .. | Bold to fine bold ... | 59s a 71s 6d |
| | Medium and fair ... | 53s a 58s |
| | Triage to ordinary ... | 20s a 50s |
| COLOMBO ROOT... ... | Fair to good .. | 12s a 14s |
| | Ord. & middling wormy | 7s a 9s |
| COIR ROPE, Ceylon .. | | nominal |
| Cochin .. | Ordinary to fair .. | £10 a £15 |
| FIBRE, Brush .. | Ord. to fine long straight | £10 a £24 |
| Cochin ... | Ordinary to good clean | £12 a £14 |
| Stuffing .. | Common to fine ... | £5 a £6 10s |
| COIR YARN, Ceylon .. | Common to superior .. | £12 a £26 10s |
| Cochin .. | ,, ,, very fine ... | £12 a £34 |
| do. ... | Roping, fair to good ... | £11 10s a £15 |
| CROTON SEEDS, sifted... | Fair to good ... | 17s 6d a 50s |
| CUTCH ... ... ... | Fair to fine dry ... | 17s a 32s 6d |
| GINGER, Bengal, rough | Fair ... | 17s 6d |
| Calicut, Cut A | Good to fine bold ... | 50s a 70s |
| B & C | Small and medium .. | 50s a 56s 6d |
| Cochin Rough.. | Common to fine dold .. | 34s a 37s 6d |
| | Small and D's ... | 30s a 32s |
| Japan .. | Unsolit ... | 22s a 23s |
| GUM AMMONIACUM .. | Sm. blocky to fine clean | 17s a 36s 6d |
| ANIMI, Zanzibar.. | Picked fine pale in sorts | £10 7s 6d a £13 |
| | Part yellow and mixed | £7 17/6 a £10 10s |
| | Bean and Pea size ditto | 70s a £7 12/6 |
| | Amber and dk. red bold | £4 5s a £9 |
| | Med. & bold glassy sorts | 90s a 120s |
| Madagascar .. | Fair to good palish .. | £4 8s a £6 15s |
| | ,, ,, red ... | £5 a £7 5s |
| ARABIC E. I. & Aden .. | Ordinary to good pale | 30s a 50s |
| Ghatti .. | Pickings to fine palo ... | 15s a 48s |
| Kurrachee. | Good and fine pale ... | 35s a 47s 6d |
| | Reddish to pale selected | 22s a 31s |
| Madras .. | Dark to fine pale .. | 16s a 33s 6d |
| ASSAFŒTIDA ... | Clean fr to gd. almonds | 40s a 70s |
| | Ord. stony and blocky | 15s a 35s |
| | Fine bright .. | £20 a £25 |
| KINO .. | Fair to fine pale ... | 30s a 90s |
| MYRRH, picked .. | Middling to good .. | 45s a 65s |
| Aden sorts | Good to fine white ... | 35s a 60s |
| OLIBANUM, drop ... | Middling to fair .. | 20s a 31s |
| | Low to good pale ... | 7s a 15s |
| pickings | Slightly foul to fine ... | 9s 6d a 14s |
| siftings | Good to fine ... | 1s 10d a 2s 1½d |
| INDIARUBBER, Assam . | Common to foul & mxd. | 3d a 1s 6d |
| | Fair to good clean ... | 1s 4d a 1s 11½d |
| Rangoon ... | Common to fine .. | 11d a 1s 8d |
| Borneo ... | | |

| | QUALITY. | QUOTATIONS. |
|---|---|---|
| INDIARUBBER, (Contd). | | |
| Java, Sing. & Penang | Foul to good clean ... | 1s 6d a 1s 2d |
| Mozambique { | Good to fine Ball .. | 2s 2d a 2s 5d |
| | Ordinary to fair Ball .. | 1s 2d a 2s 1¾d |
| | Low sandy Ball ... | 10d a 1s 1d |
| | Sausage, fair to good . | 1s 4d a 2s 5½d |
| | Liver and livery Ball... | 1s 3½d a 2s 2½d |
| Madagascar { | Fr. to fine pinky & white | 1s 11¼d a 2s 5d |
| | Fair to good black ... | 1s 3d a 1s 10d |
| | Niggers, low to good... | 10¼d a 1s 7¾d |
| INDIGO, E.I. ... | Bengal-- | |
| | Shipping mid to gd violet | 4s a 4s 11d |
| | Consuming mid. to gd. | 3s 8d a 4s 3d |
| | Ordinary to mid. good | 1s 6d a 4s 2d |
| | Mid. to good Kurpah... | 2s 8d a 3s 6d |
| | Low to ordinary .. | 1s a 2s 6d |
| | Mid. to good Madras... | 1s 8d a 2s 10d |
| MACE, Bombay, & Penang | Pale reddish to fine ... | 1s 8d a 1s 10d |
| | Ordinary to fair ... | 1s 3d a 1s 6d |
| | Chips and dark .. | 1s |
| MYRABOLANES, Madras | Dark to fine pale UG... | 2s 6d a 4s 6d |
| | Fair Coast ... | 4s 3d |
| Bombay ... | Jubblepore ... | 3s 9d a 6s |
| | Bhimlies ... | 3s 9d a 7s |
| | Rhajpore, &c. ... | 3s 6d a 5s 6d |
| Bengal .. | Calcutta ... | 3s 6d a 5s 6d |
| NUTMEGS— | 64's to 57's ... | 2s 10d a 3s 2d |
| Bombay & Penang | 110's to 80's ... | 1s 4d a 1s 10d |
| | 160's 130's ... | 7d a 1s 2d |
| NUTS, ARECA ... | Ordinary to fair fresh... | 8s 6d a 12s |
| NUX VOMICA, Bombay | Ordinary to middling... | 4s 6d a 6s |
| Madras .. | Fair to good bold fresh... | 6s a 7s 6d |
| | Small ordinary and fair | 4s 6d a 7s |
| OIL OF ANISEED ... | Fair merchantable ... | 10s 6d |
| CASSIA .. | According to analysis.. | 7s 9d a 9s 6d |
| LEMONGRASS ... | Good flavour & colour... | 2½d |
| NUTMEG ... | Dingy to white ... | 3¼d a 4d |
| CINNAMON ... | Ordinary to fair sweet... | 4d a 1s 3d |
| CITRONELLE ... | Bright & good flavour... | 1s 9d |
| ORCHELLA WEED— | | |
| Ceylon .. | Mid. to fine not woody... | 11s a 15s |
| Zanzibar. .. | Picked clean flat leaf ... | 10s a 20s |
| | ,, wiry Mozambique | 15s a 17s 6d |
| PEPPER—(Black)— | | |
| Alleppee & Tellicherry | Fair to bold heavy ... | 2¼d a 2½d |
| Singapore ... | Fair ... ... ... | 2 7-16d |
| Acheen & W. C. Penang | Dull to fine ... .. | 2d a 2⅜d |
| PLUMBAGO, lump .. | Fair to fine bright bold | 15s a 17s 6d |
| | Middling to good small | 3s 6d a 13s |
| chips ... | Dull to fine bright | 1s 6d a 8s 9d |
| dust ... | Ordinary to fine bright | 2s a 6s |
| SAFFLOWER ... | Good to fine pinky ... | 90s |
| | Middling to fair ... | 80s |
| | Inferior and pickings ... | 60s a 65s |
| SANDAL WOOD— | | |
| Bombay, Logs | Fair to fine flavour .. | £30 a £50 |
| Chips | ... ... ... ... | 5s a £3 |
| Madras, Logs | Fair to good flavour .. | £30 a £50 |
| Chips | Inferior to fine ... | £4 a £8 |
| SAPAN WOOD, Bombay | Lean to good ... | £4 a £6 5s |
| Madras | Good average ... | £4 a £6 nom. |
| Manila | { Rough & rooty to good | £4 10s a £5 15s |
| Siam | { bold smooth ... | £6 a £7 |
| SEEDLAC .. | Ord. dusty to gd. soluble | 70s a 95s |
| SENNA, Tinnevelly ... | Good to fine bold green | 6d a 8d |
| | Fair middling medium | 2¼d a 5½d |
| | Common dark and small | ½d a 2d |
| SHELLS, M. o'PEARL— | | |
| Bombay ... | Bold and A's ... .. | £4 a £4 7s 6d |
| | D's and B's ... ... | £3 15s a £4 7/6 |
| | Small ... ... ... | 67s 6d a 75s |
| Mussel ... | Small to bold ... | 17s a 46s |
| TAMARINDS, Calcutta... | Mid. to fine bl'k not stony | 9s |
| Madras ... | Stony and inferior .. | 6s a 7s |
| TORTOISESHELL— | Selected ... ... ... | None sold |
| Zanzibar and Bombay | Small to bold dark ... | |
| | mottle part heavy ... | 20s a 26s |
| TURMERIC, Bengal ... | Fair ... ... | 7s 3d |
| Madras ... | Finger fair to fine bold | 8s a 9s 6d |
| Do. | Mixed midlng. [bright | 7s a 8s |
| Do. | Bulbs .. .. .. | 6s 6d a 7s 6d |
| Cochin ... | Finger .. .. .. | 7s a 7s 6d |
| | Bulbs ... .. .. | 5s 6d a 7s 6d |
| VANILLOES— | | |
| Mauritius and Bourbon ... } 1sts | Gd. crysallized 4 a 9 in. | 17s a 32s |
| 2nds | Foxy & reddish 4½ a 8 ,, | 11s a 15s |
| 3rds | Lean and inferior .. | 7s a 10s |
| Seychelles ... | { Inferior to fine crystallized 3½ a 9 in. } | 8s a 31s |
| VERMILION ... | Fine, pure, bright ... | 2s 3d a 2s 6d |

THE

# AGRICULTURAL MAGAZINE,

## COLOMBO.

*Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."*

The following pages include the Contents of the *Agricultural Magazine* for May:—

Vol. VII.] MAY, 1896. [No. 11.

### SEASON NOTES.

WESTERN PROVINCE.—Maha crop harvested and preparations being made for yala cultivation. Vegetables generally scarce except in Colombo district and Rayigam Korale. Crop prospects satisfactory except in Colombo district where the dry weather has retarded yala cultivation.

CENTRAL PROVINCE.—Maha crop harvested or being reaped. Crops good as a rule. Chena crops generally satisfactory. *Stock.*—Hoof-disease prevailing in Walapane.

NORTHERN PROVINCE.—Paddy harvest and dry grains good as a rule; in Panankaman a disease called "chental" is reported to have injured crops. Reaping and curing tobacco commenced in parts of Jaffna district, average yield expected, through in some places the plants have been attacked by a worm called alukanavan. *Stock.*—Hoof and mouth disease still lingering and a few cases of murrain reported.

SOUTHERN PROVINCE.—Operations for yala crop, principally sowing, going on under satisfactory conditions, except in Galle district where the germinating grain has suffered owing to the severe drought. Dry grains also being sown. *Stock.*—No disease reported.

EASTERN PROVINCE.—Munmari crops harvesting, yield satisfactory; preparations for pinmari. Dry grains fair in Trincomalee but damaged by rain in Batticaloa district. Tobacco crop in the former place good. *Stock.*—Hoof disease dying out in Batticaloa.

NORTH-WESTERN PROVINCE.—Paddy harvest practically over, and generally satisfactory; in Kurunegala reported a marked success. Chena crops also good.

NORTH-CENTRAL PROVINCE.—Some of the maha crops being reaped, others in various stages. Chena crops almost all reaped, with satisfactory results. Harvested chenas being sown with gingelly. Most of the tanks full. *Stock.*—Cattle murrain still prevailing everywhere except in Tamankaduwa.

PROVINCE OF UVA.—Maha paddy being sown or just over. Kurakkan harvest over, crops good or fair. Fruit and vegetable plentiful except in Bintenne, Udukinda, and Wellawaya. *Stock.*—Health good, excepting cases of foot and mouth disease along cart roads.

SABARAGAMUWA.—Maha harvest over, crops generally good, yala ploughing begun. Preparations for chena sowing. *Stock.*—Murrain occurred at Yatattawala, but apparently stamped out. Prospects of paddy and dry grain crops good.

## RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING THE MONTH OF APRIL, 1896.

| | | | | | |
|---|---|---|---|---|---|
| 1 | Wednesday | ·05 | 19 | Sunday | ·18 |
| 2 | Thursday | 2·96 | 20 | Monday | ·39 |
| 3 | Friday | ·07 | 21 | Tuesday | Nil |
| 4 | Saturday | ·43 | 22 | Wednesday | Nil |
| 5 | Sunday | 3·18 | 23 | Thursday | ·26 |
| 6 | Monday | ·08 | 24 | Friday | ·07 |
| 7 | Tuesday | ·30 | 25 | Saturday | ·01 |
| 8 | Wednesday | ·05 | 26 | Sunday | ·34 |
| 9 | Thursday | Nil | 27 | Monday | ·50 |
| 10 | Friday | Nil | 28 | Tuesday | Nil |
| 11 | Saturday | Nil | 29 | Wednesday | 1·89 |
| 12 | Sunday | ·01 | 30 | Thursday | ·12 |
| 13 | Monday | ·90 | 1 | Friday | ·08 |
| 14 | Tuesday | Nil | | | |
| 15 | Wednesday | ·16 | | | |
| 16 | Thursday | Nil | | Total | 12·48 |
| 17 | Friday | ·43 | | | |
| 18 | Saturday | ·07 | | Mean | 4·16 |

Greatest amount of rainfall in any 24 hours on the 5th instant, 3·18 inches.

Recorded by M. W. R. BANDAR.

## MINOR INDUSTRIES.

In spite of all the natural advantages we possess in regard to a wealth of raw products and in the way of cheap labour, minor manufacturing industries have not taken a hold in any part of the country. In this respect we are even far behind India. Practically the only occupation which the villager thinks seriously of as a means of sustenance is the cultivation of the soil, but as he is not engaged in this work all throughout the year, and his family have ample leisure between the sowing and reaping seasons, there is ample opportunity thus afforded for working at the minor manufacturing industries if they are so inclined. This is particularly the cases in interior villages. Along the sea coast where arable land is not available a few minor industries, notably carpentry and coir-work have sprung up, but even here there is a tendency to stagnation. And what is the reason of all this? It is not fair to attribute it to apathy and idleness, for which the Sinhalese villager is invariably blamed. In many instances it will be found that he will be only too glad to avail himself of a means of increasing his income and willing to work by night and day in some profitable employment which will not interfere with the cultivation of his ancestral holdings, were he not met by serious obstacles. The lack of technical knowledge and the inability to initiate new industrial enterprises are indeed the true causes which are responsible for the enforced idleness of the Ceylon goyiya. For who is capable of starting a new industry without possessing these qualifications? But given these conditions two others are also necessary, viz., the possession of sufficient capital to carry on the enterprize through its initial and experimental stage and the existence of a market for the produce.

The charge of laziness brought against Sinhalese villagers is often the result of a comparison made between him and the Tamil cooly. It is stated that the latter is constantly absenting himself from work on the excuse that *he has to attend* to his own land at certain season, or again that he has to observe certain religious festivals, or even to perform such social duties such as attending weddings and funerals. The great difference in the domestic life and relations of the Sinhalese and Tamils must, however, be taken into consideration in making such a comparison, and due allowance made for the strong associations by which the Sinhalese villagers, from his environments, is influenced—perhaps to his misfortune. The force of circumstances thus works against his "shining" under so exacting a system of discipline as is involved in the management of estate labour. In this connection I would quote the opinion of a leading Sinhalese gentleman, put with much force, on the suitability or otherwise of cooly labour for the Sinhalese villager. He says: "I shall be as sorry to see the Sinhalese villager reduced to the condition of a Tamil cooly as delighted to find him elevated to the position of a peasant proprietor......The magic of property turns sand into gold and converts a desert into a garden. It stimulates industry, helps the cultivation of prudential wishes, encourages thrift, and inspires one with a spirit of self-reliance. The economical, social, and political advantages which such peasant proprietorship in places circumstanced as Ceylon would secure are obvious. In short, one prefers a Sinhalese with the feelings and principles of a proprietor to one with those of a cooly. If he is transformed into a cooly, the results of his labours will be to confer advantages upon his employer out of all proportion to any which he will derive by the transformation. The advantages to him, if any, will be temporary and more seeming than real, and dependent entirely on the laws of demand and supply; and the operations of these laws will be eventually to the advantage of the employer."

To resume: there are, as pointed out, certain adverse circumstances that combine against the developement of minor industries in the villages. The villagers have no opportunity of acquiring any knowledge of the methods on which these industries are based, or of the appliances which aid their developement and the principles which control them. Assuming that the villager can read, there are no books in the vernacular to which he could look for enlightenment, while he has no opportunity of practically acquainting himself with the processes he desires to adopt in the manufacture of the various industrial products that fill the markets of the world and have to be imported into this Island. How, for instance, could he be expected to prepare dye stuffs or tanning materials as commercial articles when he knows nothing of the demand for them or the uses to which they are put? It would seem reasonable, therefore, to expect that those who are concerned in the welfare of the masses, and indeed of the Island itself, should devise means to clear away the obstacles that stand in the way of industrial developement in its relation particularly to the vegetable resources of the colony. Some of the means that suggest themselves as likely to be of avail are the holding of industrial shows, establishing of industrial museums, and the distribution of pamphlets giving such information as will help the people. The former institutions need not be on a lavish scale, but carefully planned and economically worked with certain specific objects in view. Technical instruction, wherever

imparted, should not be confined to screw-cutting and lathe-making; it should aim at developing the natural resources of the Island, and the industries appropriate to it and suited to the conditions of the masses, and encourage the utilizing of local materials in the manufacture of industrial products. The extracting of tanning and dye-producing substances, the distilling of essences and oils, the treatment of gums and resins, mat-making of a superior kind, wicker and ornamental work; tile, brick and cement making, porcelain work, fruit-dying, apiculture,—these are some of the industries that strike one as being in the line of our village population. The material for such industries we have, but what is wanting is the technical knowledge necessary to work with them successfully and profitably.

W. A. D. S.

## OCCASIONAL NOTES.

With reference to Mr. Frank Modder's interesting paper on the Peaty Deposits in the Kurunegala tank, we would offer some further remarks. Peat is an aggregate of vegetable growth—chiefly marsh-loving plants such as those enumerated in Mr. Modder's paper—closely interwoven and more or less compressed and decomposed, the colour varying often in the same bed from light brown above to dark brown or black below. The vegetable matter is not much changed. In the upper layers the peat is often found growing and is soft and spongy; a little further down it is somewhat firmer, but its vegetable structure is quite apparent; at the bottom the vegetable substance is more decomposed, and the peat becomes somewhat compact and is generally very soft, easily dug and cut. When dried the upper portions of a bed of peat are felt-like, somewhat resembling compressed hay, or more nearly, silage, while the bottom part ma'y be tough and almost as compact as some kinds of lignite. The amount of ash varies very much—some varieties containing less than one per cent., others over 60 per cent. The most extensive areas of peat-moss occur upon flat-lying ground, where the layer of vegetable matter varies from a foot or so up to ten or fifteen yards. Peat is distributed over considerable areas in both the old and new world. A temperate climate is considered to favour most the growth of peat bogs, and growth is regulated by the supply of moisture and by physical conditions. Peat deposits are of very different ages,—some being of quite recent formation, while others date back to the glacial period. Most of the larger areas of peat are manifestly of ancient origin, the modern formations being no where so extensive as the older, since the conditions which favour its occurrence are more restricted owing to natural physical causes, as well as to the interference of man for economic ends—such as the amelioration of land for agricultural purposes, or it may be on sanitary or other grounds. Old peat deposits apparently do not occur in the Island, and it would seem that the conditions which favour the formation of peat locally are restricted to very limited areas. Indeed, the deposits which occur in such lowlands as the marshy portions of the Muturajawela fields and Model Farm hardly merit the name of peat. The question, therefore, of the availability of peat for fuel purposes practically does not affect us, but there are other economic uses for which such local and limited supplies of peat,—if indeed it would be wise to encourage its formation—may be available. Unless in the neighbourhood of the deposits there is no special value to be attached to peat as an organic manure for mixing with poor thin soils, or the ash got from it on account of the potash and other mineral ingredients it contains, since it has no great advantage over ordinary organic refuse on the one hand or wood ashes on the other. Peat, however, is much valued owing to its great absorbent properties, and is very useful as a medium for absorbing liquid manure &c. Peat moss litter as exported from Germany is in fact largely used in England in byres and stakes, while it is also a very effective deodoriser.

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In our last issue there appeared a letter signed "Cocopalmist" dealing with certain questions connected with coconut cultivation. Our correspondent is certainly very exacting as regards analyses of the various organs, and parts of organs, of the palm. For practical purposes, however, an analyses of the nut—husk, shell, and endosperm (albumen)—as representing the crop removed off the land, and the chemical constituents of which it would be in the interests of good cultivation to return to the soil as manure, should, we suppose, be sufficient, but it may be that our correspondent as a far-seeing agriculturist has special reasons for desiring so complex a series of analyses as he indicates in his letter, and we shall be pleased to hear more of the methods which direct his system of cultivation and the objects he has in view. We certainly admire the liberal advocacy of our correspondent for more room for the coconut-palm, and are greatly interested in the figures he gives (which will, no doubt, astonish many) in support of his recommendation that some 35 or 40 trees should be the maximum number allowed per acre. The structure of the stem of the coconut-palm (a monocotyledon) in which the fibro-vascular bundles are not concentrically arranged no doubt gives it an advantage over the dicotyledon, when either the outer or inner stem is more or less injured, but in any case, the palm must suffer materially from the interference that such injury would cause, with the full and complete exercise of its nutritive functions, with the ultimate result that must come sooner or later of a complete collapse.

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We are in receipt of a pamphlet embodying the Rules and Constitution of the Tissamaharama Cultivator's Association, the objects of the existence of which are thus set forth:—

(*a*) To systematize the cultivation of paddy and various other products at Tissamaharama.

(*b*) To obtain the necessary help from Government on that behalf.

(*c*) To do all things requisite for the general improvement of Tissamaharama.

(*d*) To remove whatever causes there may be retarding the progress of Tissamaharama.

The statement of these objects is sufficient to show that the Association is built on a good foundation and has good cause for existence, and it is to be hoped that it is working well for the objects which it has set forth, further that while full of energy to fulfil these objects, it is not an aggressive body and does not go beyond its legitimate functions. As we have before stated, Agricultural Associ-

ations in Ceylon have no record to be proud of, but it is to be hoped that the interests of our cultivators will be better looked after in the future, and the springing up of such Societies as the Grama Raksha Samagama of Dalugama and the Tissamaharama Cultivator's Association is certainly a good sign. What we should like to see is a representative Central Agricultural Society with headquarters in Colombo and branches all over the Island. The amount of work before such a Society is prodigious; the interchange and distribution of seed alone being sufficient to give it something to do that will benefit our cultivators beyond measure.

## MARSDENIA TENACISSIMA.

This plant, belonging to the order Asclepiadeæ, is known among the natives as Muruvadul. Royle referring to it, states that it is remarkable that a plant which yields so valuable a fibre and a caoutchouc should be practically unknown. Marsdenia tenacissima is a climber, and is generally found in barren localities among bushes and small trees. A milky juice exudes from cuts on the stem, which thickens into an elastic substance or caoutchouc, which like India-rubber removes black lead marks. The fibre is got from the bark, and is fine, silky and of great strength— a line made of it breaking at 248 lb. dry and 343 lb. wet, as against hemp at 158 lb. and 190 lb. One of the chief features of the fibre is its great elasticity, and is, according to Royle, the second best of all the fibres in India. The sample shown at the Indian and Colonial Exhibition is said to have been universally admired, and, indeed, some of the experts are reported to have considered it a very superior quality of rhea. According to Messrs. Cross, Bevan & Kings' Chemico-microscopic examination of the fibre, it is very considerably superior to rhea. When compared with rhea, flax, wara and sun-hemp, it headed the list in percentage of cellulose, and lost considerably less than any of the others either under hydrolysis with caustic soda or in acid purification, while it held the third place in increased weight by nitration. These are facts the value of which cannot be overestimated. They point the fibre out as being, from a scientific stand-point, far more worthy of experimental cultivation than rhea or any of the other fibres with which it has been compared above. The one point of uncertainty regarding it, which practical experiments alone can solve, is its yield of fibre per acre as compared with the cost of cultivation—in other words, the price at which it can be put down in the textile markets. The ultimate fibres are 5 to 20 mm. in length, *i.e.*, nearly as long as those of flax, and two or three times as long as those of sun hemp or of jute, though of course very much shorter than the fibres of rhea. But from this point of view rhea stands by itself as its ultimate fibres (40 to 200 mm.), are far in excess of any other known fibre. Messrs. Cross, Bevan & King say of Marsdenia:—Next to rhea it must rank in point of fineness and durability, and we cannot urge its claims to the attention of Government in too strong terms. If it can be shown that the fibre could be cultivated at all, it might then become a question whether this or rhea could be produced the cheaper.

The shortness of the fibre ribbons, as usually met with, would, Dr. Watt presumes, be viewed as unfavourable, but since this is by no means a necessity, it might be well to adopt some process of decortication (such as that the Favier) that would produce ribbons the full length of the twigs.

The plant in Watt's opinion is too scarce and unimportant—looking for its merits to come by the usual "private enterprize" means to be recognised by the manufacturer. "It must be cultivated, and that too perhaps for a good many years, before a final opinion can be pronounced. It is a climber and does not appear to grow either rapidly or profusely, but there is no knowing what it might do under careful management. Very likely the allied species *M. Roylei* might be found a more suitable species for experimental cultivation, but of course in warm regions only. Marsdenia is however too valuable a fibre to be longer ignored, and it would serve a public good were the various Botanic Gardens and Agri-Horticultural Societies to take its experimental cultivation under their special charge. Were the cultivation of Marsdenia tenacissima to prove remunerative, the plant might be reared in every hedgerow in India, but being a climber difficulties exist with which the Indian cultivator of fibre crops has not yet attempted to deal. In order to avoid these difficulties—the expenses and trouble of constructing supports for a climbing plant—it would be as well first to ascertain whether it could be induced to crawl over the ground instead of requiring support.'

## COCONUT, GINGELLY AND CASTOR CAKE.

*Coconut Cake.*—Prof. Vœlcker in his Essay on *The Influence of Chemical Discoveries on Agriculture* remarks that Coconut Cake is better adapted for fattenning stock than for young growing animals or store stock. The analysis of palm-kernel cake is given as follows: Water 9·50; oil 8·48; albuminous bodies 30·40 (containing nitrogen 4·50); mucilage, sugar, fibre, &c. 40·95; mineral matter (ash) 10·72.

*Gingelly (Til or Sesamum) Cake.*—According to Soubeiran and Giradin's analysis this cake contains of water 11 per cent; oil 13 per cent; protein compounds 34·81 (containing nitrogen equal to 5·57); ash 9·5 per cent. Prof. Anderson gives the following as the results of his analysis of the cake which he includes in a *List of the principal Varieties of Cattle Food:* Water 10·38; oil 12·86; nitrogeneous compounds 31·93; mucilage, sugar &c. 21·92; fibre 9·06; ash 13·85. The article oil-cake in the *Encyclopoedia Britannica* shows the chemical composition of gingelly cake as follows: Water 8·06; oil 11·34; albuminous bodies 36·87 (containing nitrogen 5·90); mucilage, sugar, digestible fibre &c. 25·05; woody fibre 8·14; ash 10·54. Dr. Watt referring to the cake says: As a manure this cake would appear to be far less valuable than rape, castor or hemp, but as an article of cattle food it is probably very wholesome since the relation of oil to nitrogenised compounds is less arbitrary than in most oil-cakes. The seed also is very small, contains no indigestible husk, and is largely eaten in India as an article of human food—facts which all tend to confirm the opinion that sesamum cake is perhaps one of the most wholesome of all. The exports from India of the seed which yields this cake have year after year for some time

past been steadily increasing. That it is being employed by the cake-makers in the fabrication of what is known in the trade as certain qualities of linseed cake there would seem to be no doubt.

*Castor-Cake.*—In India this is one of the most highly-valued of all oil-cakes as a manure. In Europe it has acquired an evil repute as one of the most dangerous substances when used in the fabrication of inferior qualities of linseed cake. In commerce it appears to be sometimes designated Jatropha manure. Morton in his Cyclopædia of agriculture has the following passage:—This cake can only be used as a manure; for feeding purposes it is entirely unsuited, as the oil still remaining in the cake is exceedingly purgative and poisonous. This manure was recently analysed by Mr. Thomas Herapath who found it to contain in 100 parts: water 10·24; nitrogen in fresh cake 4·20; nitrogen in dry cake 4·68; ash 7·88. The ash itself contained in 100 parts: soluble salts 6·193; carbonates 21·07; insol. phosphates 53·554; silica &c. 19·183.

Perhaps a more instructive table of analysis of castor cake is that published by the late Prof. Anderson of Glasgow in his *Agricultural Chemistry:* Water 12·31; oil 24·32; albuminous compounds 21·91 (containing nitrogen 3·29); mucilage, sugar, fibre &c. 35·38; ash 6·08. The ash contained silica equal to 1·96, phosphates 2·81, and phosphoric acid in combination with alkalis ·64.

## SOIL ANALYSIS.

BY F. B. GUTHRIE.
(*Continued.*)

By the porosity of a soil is meant the fineness and number of its pores. We must distinguish between this and permeability to water; a coarse sand, for example, being permeable to water, but possessing properties exactly opposed to those of a porous soil. Humus soils are especially porous. On the fineness of texture depend the following characteristics:—

The capillary power, by which is understood the power of imbibing water. This property maintains a continual circulation of water within the soil, and consequent aeration. It is, moreover, largely through the agency of this circulating water, which is charged with carbonic acid and different salts, that the mineral, and in a less degree the organic matter, of the soil is rendered available for plant food and presented in solution to the plant.

The capillary power of a soil depends very largely upon the fineness of its texture. The nearer the texture approaches that of a sponge the greater will be its capillarity.

Humus has a very high capillary power, which is not possessed to any extent by either coarse sand or clay.

This property is determined by filling a tube of known length with the finely powdered air-dried soil; the tube is open at both ends, the lower end being closed by a piece of fine muslin, and stands in water. At the end of twelve or twenty-four hours the height to which the water has visibly risen in the tube is read off. The determination presents no special difficulty, and I will not waste your time with long descriptions of this or other methods mentioned here. They are all capable of being rapidly and accurately performed.

The capacity of a soil for water is also of special interest, and depends partly upon its porosity and partly on its content of organic matter. Peaty and humus soils, other things being equal, have the highest capacity for water, followed in order by marls, clay, loams, and sand.

The hygroscopic power—that is, the power of attracting water vapour—is of practical importance, in that it prevents undue evaporation, and prevents the soil from becoming parched up. It also serves as a guide to the absorptive power for other gases. This property, like capillarity, is due entirely to the fineness of texture, and the order is the same—humus, clay, loam, marl, sand, and coarse sand.

The absorptive power of the soil for salts is a factor of very great importance in determining the fertility of a soil.

This power which soils possess of removing saline matter from solution, and retaining it within their pores, is due partly to the chemical nature of the soil, resulting in a chemical interchange of basic constituents, and partly to its mechanical structure, the fineness of its texture, substances such as humus and clay possessing the power in a remarkable degree.

This property is determined by a method elaborated by Knop.

The absolute weight of the soil, though it has no bearing upon its fertility, is a point that should always be taken into account, since a heavy, sandy soil, though it may contain a smaller percentage of fertilising material than a light clay soil, presents a larger mass to the plant in the same space.

We now come to the most important property possessed by soils as affecting their fertility, and, at the same time, the most obscure, namely, their power of nitrification. This property depends upon a number of points, on some of which our information is not very clear.

From what we know of the process of nitrification, we can lay down with tolerable certainty the following conditions as being favourable to the process:—

We must have free access of air and moisture, a certain degree of warmth, the presence of nitrogenous organic matter, prone to oxidation (represented by humus). The presence of reducible mineral matter, such as sesquioxide of iron or metallic sulphates, is also favourable. A sufficiency of basic subtances to combine with the nitric acid appears also to be advantageous to nitrification.

Putting on one side the bacteriological aspect of the phenomena involved, we shall find that the formation of nitrates within the soil is due to oxidation, and that within certain limits the power of oxidation which the soil possesses is also the measure of its nitrifying power.

We are, therefore, I believe, justified in assuming that the soil will be most favourable to the development of the nitric ferment which combines the following characteristics:—

1st. A fair proportion of humus.

2nd. A warm climate.

3rd. Provision for free access of air and of moisture (these depend upon its porosity, and are determined by its capillary power).

4th. Good drainage to prevent stagnant water accumulating.

5th. A certain proportion of basic substances.

It will be seen that, beyond the presence of certain mineral and organic matter, the conditions favourable to nitrification are those whose presence otherwise indicates fertility—namely, fineness of texture and absence of excessive water. If the capillary power of a soil is low, it indicates an unfavourable condition for nitrification.

It has recently been stated by a French writer that the presence of nitrates in the soil assists in rendering soluble the potash in such insoluble combinations as felspar, which is an additional mode by which the nitric organism promotes fertility.

Provided, then, that the condition of the soil, as indicated by the physical properties above enumerated, is favourable to what I may call the metabolism of plant food, its fertility will depend upon the amount of that plant food, and it is immaterial whether that plant food is now in a soluble state or not. If the mineral and nitrogenous matter are present in sufficient quantity, and the soil possesses high absorptive capacity, high capillary powers—in short is of texture, and possesses the conditions conducive to nitrification—it may, I think, be fairly expected to prove a fertile soil; and in cases where one or more of the conditions conducive to fertility are absent, we may look to improved methods of cultivation to attain that fertility.

The tabulated results of such an analysis as I have indicated would be as follows:—

Reaction of soil.
Weight of soil (per acre, 6 or 9 inches deep).
Capacity for water.
Capillary power.
Absorptive power for salts.

MECHANICAL ANALYSIS.

Gravel.
Sand.
Fine sand.
Clay.

CHEMICAL ANALYSIS (OF FINE SOIL).

Water.
Organic matter.
Nitrogen.
Soluble in strong boiling hydrochloric acid: Lime. Potash. Phosphoric acid.

The quantity of organic matter (which is the volatile matter after deducting water and carbonic acid) afford a sufficiently close indication of the amount of humus present.

The nitrogen determined is total nitrogen. If nitrates are present, the modification of Kjeldahl's method is the most suitable.

I believe the above represents the fewest determinations upon which an accurate judgment can be based. I also believe that with the aid of the above data, practical experience, and a modicum of motherwit, thoroughly reliable and useful advice may be given as to the means to be adopted for ameliorating the soil.

The manures to be used and their quantities will to some extent depend upon the nature of the soil, and to a much less degree upon the quantities of the fertilizing ingredient found to be present, but principally upon the nature of the crop. Soil analysis in the past has been too much occupied with the notion that the amount of fertilizer required depends upon the quantity already in the soil, and that nothing is necessary but to add so much of the particular ingredient in an available form as, together with what is already present, will produce a sufficiency for all requirements. I believe the principle is a sound one, which tells us to manure the crop and not the ground, and that the soil to be improved is to be improved, not by chemicals, but by proper cultivation, by deep-ploughing, draining, liming, green-manuring, and other means of improving the texture, without which it is impossible to maintain the conditions necessary to fertility.

## THE PRESERVING OF FRUIT.

(*Continued.*)

In a general way it may be said that all fruits and vegetables that endure stewing without injury to flavour or the form of the fruits are suitable for canning. Oranges would thus have to be excluded because of the peculiar bitter principle which they develope in cooking. Some fruits again are unsuitable for the reason that in cooking they change form rapidly, becoming "sauce," on which account they soon become flavourless in the can.

The modern fruit can is said to be an American invention. Usually and preferably, so far as home work is concerned, it is made of glass with metallic covers. Tin cans with tight-fitting covers and a sealing of wax are sometimes used, but the objection to them is that the metal is often acted upon by acid fruits thus causing a flavour which is both disagreeable and injurious. There are of course many kinds of cans or jars, and each sort doubtless has points of advantage which will commend it to users. The patent cans known as the "lightning" and "Mason's" are among the best. The jars and ordinary cooking utensils are really all the appliances absolutely needed for canning. A tin funnel, with wide throat, for filling the jars is a convenience.

The following is a recipé for making wax for sealing fruit:—Melt one pound of resin over a slow fire. When hot add one ounce of beeswax and two ounces of tallow or other fat, stirring well till mixed. Let the mixture cool a little and pour into a greased can for keeping. When used heat till melted, and dip corks or covers into it, sealing instantly while hot.

Only the best fruit is worth the trouble of canning. None that are over-ripe, green, speckled or partly rotten should be used. The fruit should not be kept long after gathering before canning, and after pealing, pitting, &c, as may be necessary, it should as soon as possible find its way into the cans. Some fruits will require halving for convenience in cooking and handling, but flavour and appearance will be greatly improved by using the fruit in as nearly as possible its original condition as to form. Some fruit need no paring at all, and indeed lose flavour if pared. In regard to the subsequent operation of cooking, and the amount of sugar used in sweetening the fruit, it is sufficient to say that care should be taken not to overdo the former, while the amount of sugar used should be governed wholly by one's taste.

The following are the two methods of canning now commonly in vogue in America:—

(1.) This, considered to be the most perfect method, is the one employed exclusively by the canning factories. The fruit, neatly prepared, is packed as closely as possible into the glass jars, which are filled with a syrup made by boiling sugar and water together. Place the jar in a kettle or boiler of tepid water on a few nails or wooden sack with holes bored through, allowing the water to come up within an inch of the top of the jar. Put on covers lightly, cover the kettle or boiler and boil till fruit is done. Have some syrup ready on the stove for filling up the jars. When done, remove the jar from the water, place it on a folded wet towel, fill to the top with hot syrup, wipe off the neck and fix cover tightly by rubber and screw top or other means. Invert each can as a test: if not airtight the syrup will ooze out. If still hot, remove the cover, refill with hot syrup and re-seal. But if it has become cold turn out the syrup and refill the can again. Fruit that is cooled in the jars retains not only its shape, thus looking far more inviting, but also its delicate flavour.

(2.) The second plan is the one most used by the housewife in America. It is simply to boil the fruit in a syrup placed in a porcelain-lined stew-pan or kettle until sufficiently cooked, and pour it boiling hot into the cans, stirring about with a spoon to let the air bubbles escape. The can is now filled with hot juice or syrup and the neck wiped with a wet towel before sealing up as before. If the fruit is in pieces, they should be placed in the jar carefully with a fork or spoon, a little syrup put in first to temper the jar. If there is fruit remaining in the pan it should be carefully drawn to one side of the stove and not allowed to overcook while the filling process is going on; frequently fruit is spoiled in this way. The advantages of this method are that much more fruit can be put into each jar after shrinking by cooling them in the fresh state. A word of caution in regard to filling glass jars with hot fruit is necessary. The jar, while being filled, should be placed on a damp cloth, folded so as to completely fill the hollow in the bottom of the jar, and in it should be inserted a common table knife having a metallic handle, or a spoon, as an additional precaution against the sudden expansion of the glass and consequent breakage. Of course the knife is removed before the lid is finally fixed on. Again, it should be seen that the cans are thoroughly scalded out with hot water before using. Too much emphasis cannot be laid on this point. In the case of both methods above described, the jars, while their contents are hot, must be kept out of the reach of draughts of cold air, as otherwise the glass will contract suddenly, with the result that many will be broken.

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## THE NUTRITIVE PROCESS IN PLANTS.

*Prof. J. Reynolds Green, D.Sc., F.R.S.*

(*Continued.*)

The places where these permanent reserves are accumulated are more numerous than we are apt to suppose. Seeds, tubers, roots &c. readily occur to us as parts of the plant in which we may find them. In the short-lived plants, which we group together roughly as herbaceous in their habits, these are necessarily the most important reservoirs. But it is different with trees and shrubs which last for many years, and which do not form fleshy receptacles. We have in these, stout stems or trunks, with numerous branches; large woody roots which continue to grow year after year, keeping pace with the parts above ground. Though the primary use of these members is not to store food products, yet they have work of this kind to do. A tree which has a trunk and a root which is growing in thickness is in need of a constant rather than an intermittant supply of food material placed near the actively growing regions. The growth in thickness of such a trunk or root is brought about by the activity of a layer of delicate living cells, which are constantly dividing to produce new wood and new bast, and which appear as a ring of what is called *merismatic* or dividing tissue, on the exterior of the woody mass. The new cells so formed need a constant supply of nutritive material, at the expense of which they develope the peculiar features of wood and bast respectively. The merismatic tissue itself which is called the *cambium layer*, is in great need of food, or it is perforce obliged to cease dividing, and so the growth in thickness of the tree is stopped. Cell division is indeed the result of cell-growth. When such a cell has reached its full size, it divides into two, each of which grows to its appropriate adult dimensions; some divide again like the ones from which they sprang; others become transformed into wood or bast cells. In either case an immediate supply of food is needed, and from the condition of things this supply must be near at hand. We must therefore expect a number of places near the cambium in which these materials may be laid down. We find them accompanying the cambium—either in the form of sheaths surrounding the whole ring of the new tissue or in the spaces called medullary rays, which are formed between the masses of wood, these rays being composed of cells which differ in shape from the trypical forms of wood and bast cells.

In stems of smaller girth, which have not developed much wood, we find stores of food material laid up in the region just underneath the surface, which constitutes what is called the *cortex*, and which gives place later on to the complex formation which is familiar to us under the name of *bark*.

In studying these reserve materials, we have thus first to consider how they are originally formed from the simple substances which the plant absorbs from the air and from the soil, and then to ascertain how they are transported to the reservoirs in which we find them, and how they assume the definite shapes in which they present themselves.

The foliage leaf may be regarded as the chief laboratory of the plant, the place where, in the first instance, the chemical changes take place which lead ultimately to the construction of its organic substance. This organ is a winged expansion of an outgrowth from the stem, and is specially adapted to expose as much surface as possible to air and light. The midrib of the leaf is the continuation of its stalk or petiole, and takes no share in the constructive processes, serving only as the path by which fluids are conducted to it from the stem, and in turn are sent down from it into the axis of the plant. The structure of the wing or flattened portion is the most important part from our present point of view. The upper

and lower surfaces are seen to be covered by a layer of flattened, or brick-shaped cells, which contain little more than water, with the exception of certain ones to be described later. Between these two layers which constitute the upper and lower epidermis, is a mass of tissue in which the green colour of the leaf is formed, and running through this in all directions is a network of veins which are made of vascular tissue continuous with the vessels of the stem. The cells in which the green colour is formed differ in arrangement towards the two surfaces of the leaf. Those towards the upper one are arranged close together with very few spaces between them; they are oblong cells with their long axes placed at right angles to the surface. The cells towards the lower surface are not at all regular in their arrangement, but are very loosely placed, so that very large intercellular spaces are found there. These intercellular spaces are continuous with each other, and with others that extend through the leaf stalk, stem and root. The cells of the leaf tissue that abut upon these spaces have very thin walls, and thus allow readily of the absorption of the gases found in the interior of the passages by the cells bordering upon them. They at the same time allow a ready evaporation of water from the cells of the tissue. At many points in the leaf an intercellular space of large size can be seen to extend quite up to the epidermis, and close inspection shows that two of the cells of the latter layer have a small slit between them which allows of communication between the external air and the contents of the intercellular space system. The two cells that lie upon either side of the slit can have their shapes altered by variations in the quantity of the water they contain, and this causes the slits at one time to open and at others to be nearly or quite closed. These openings are called *stomata*, and the two cells bounding them are called *guard cells*. In a surface view they are seen to be somewhat kidney-shaped; being attached to each other only by their ends; it is evident that when filled with water, and consequently swollen or turgid, they open the slit by separating from each other along the greater part of their inner surfaces. When on the other hand they have lost their water, the strain on them is relaxed, they fall together and partially or wholly close the aperture.

It is however in the cells of the middle of the leaf that the chemical work goes on. If one of these is examined by the high power of a microscope, it is found that the green colour is not diffused, through the substance of the cell, but is confined to certain small bodies which are embedded in the layer of protoplasm or living substance which lines the cell. These small bodies are called ***chloroplastids*** or ***chlorophyll corpuscles***, and it is to them that we must look for the actual constructive activity. They are eventually small masses of protoplasm which have loose or spongy arrangement of particles, so that there is in each a complicated meshwork. In the meshes of this spongy mass the green colour, known as *chlorophyll*, lies in the form of a solution. The work done by the chloroplastid is very complex, but we are able to distinguish to a great extent between the part played by the colouring matter itself and that which is discharged by its protoplasmic framework.

We have in this mechanism, then, a ready means of access of air to the interior tissue of the leaf. It enters at the stomata, and of course fills all the intercellular spaces. The composition of the gases in these channels is not, however, the same as that of the atmosphere, as different gaseous interchanges between the cells of the leaf, and the spaces outside them are continually taking place. Nevertheless, whatever may be its exact composition, we know that it contains a small quantity of carbon dioxide, partly perhaps derived from the leaf itself, partly supplied by the small amount always present in atmospheric air. By virtue of its solubility in water it easily penetrates the delicate cells of the tissue, the walls of which are saturated with water, and so it comes into contact with the chloroplastids.

Not only is air thus admitted. We find that water taken in from the soil by the roots, containing various mineral and other constituents in solution, also easily reaches the leaf. No part of the constructing tissue is situated very far from a vein, and the woody portion of such vein being in direct connexion with the woody tissue of the stem, a path of ascent and distribution is readily afforded.

Thus the raw materials, which we know by experiment that the plant absorbs, meet each other in the cells of the leaf, finding themselves there in the presence of the living substance of the cell, and of certain differentiated bodies, the chloroplastids. These are the first conditions for constructive activity.

## SORGHUM HALAPENSE.

This indigenous grass (identical with Andropogon halapensis) is referred to by Mr. Wm. Ferguson in his notes on the grasses growing in Ceylon, as being abundant on the banks of the Haragam-oya, about eight miles from Kandy. He states that some roots grown in his garden in Colombo were from eight to ten feet high. "I have not," he remarks, "tried it as a fooder grass, but should imagine that it is quite equal to the Euchlœna (Reana) luxurians, Androscepia gigantea, or any of the gigantic grasses introduced to the Island and so highly recommended as fodder plants." It is said to be indigenous to Southern Europe, Syria, Cuba, and Northern Africa, and cultivated in the Brazils and Australia.

The February number of the *N. S. W. Agricultrial Gazette* devotes a special article (from which we quote below) to this grass which appears to be most commonly known as the "Evergreen millet." It is best known as a fodder grass in the United States, and the following is a reference to its growth in that country by Vasey:—

"This grass is best adapted to warm climates, and has proved most valuable on warm, dry soils in the southern states. Its chief value is for hay, in regions where other grasses fail on account of drought. If cut early the hay is of good quality, and several cuttings may be made in the season, but if the cutting is delayed until the stalks are well grown, the hay is so coarse and hard that stock do not eat it readily. The seed may be sown at any time when the soil is warm and not too dry. Failures often occur from sowing the seed too early. If there is danger that the soil should dry out before the seed can germinate, soaking the seed may be resorted to with good

results. Thick seeding gives a heavier yield, and a better quality of hay. From 1 to 2 bushels are usually sown per acre, according to the quality of the seed. In case of failure to get a good stand, the crop may be allowed to go to seed the first year, after which the vacant spaces will be found to be self-seeded. On small patches, in such cases, the ground is sometimes ploughed up, and the underground stems scattered along the furrows over the vacant spots. In most localities it is generally considered desirable to plough the land about every third year, otherwise the root-stocks become matted near the surface, and the crop is more affected by drought. Ploughing causes it to grow more thickly and vigorously."

In another work, "Report on the Grasses of the South," Dr. Vasey further says:—"Mr. N. B. Moore has cultivated this grass for forty years, and prefers it to all others. It is perennial, as nutritious as any other, difficult to eradicate, will grow on ordinary soil, and yields abundantly."

"Horses and cattle are fond of it both in its dry and green condition. Probably no grass gives better promise for the dry arid lands of the west."

*Sorghum Halapense* is said is to be common all over Northern India in cultivated and uncultivated ground, and is considered to be a good fodder grass both for grazing and hay.

The Department of Agriculture of Victoria distributed some of the seed of this grass to farmers in 1888, and following are extracts from the circular issued at the time:—"Superior both as a grazing and hay grass; has abundance of roots, which decay, thereby enriching the ground rather than exhausting it. The best results follow sowing the seed in August and September, enabling the seed to get a good root by the autumn, and forming a better turf the following season. Sow broadcast at the rate of a bushel an acre, and cover with a light brush, or sow just before a heavy rain. Three good crops the following season will be the result if the season is favourable."

Baron von Mueller quotes J. L. Dow, of Victoria, as stating that it keeps green in the heat of summer; also, Mr. Hollingsworth, that it is not eaten out by pasture animals. The Baron adds, "It will also grow in drift sand of the coast, and will keep growing during the dry season, when most other grasses fail, but improves much on irrigation; the roots resist some frost; three tons can be cut from one acre in a single season; it yields so large a hay-crop, that it may be cut half a dozen times in a season, provided the land be rich. All kinds of stock have a predilection for this grass."

The greatest objection to this grass is the difficulty of eradicating it, and care should be taken not to introduce it into fields intended for cultivation. It is also said to produce injurious effects on cattle if eaten when too young or when the plants are stunted by drought.

Duthie mentions that the seed of this grass is collected in some parts of India, ground and mixed with the flour of *Pennisetum typhoideum* (cambu) and eaten by the poorer classes.

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## IS A CHARGE OF BAD CULTIVATION ACTIONABLE?

This question was before Lord Kincairney on Tuesday of last week in connection with the action brought by Alexander M'Keand, farmer, Port-William, Wigtownshire, against Sir Herbert Maxwell, Bart., M.P., for damages to the amount of £500 for alleged slander. The pursuer had for thirty-six years been tenant of a farm on the defender's estate. His lease expired at Whitsunday, 1895. He offered £200 as a rent for a renewal of the lease, but the defender refused the offer, but shortly afterwards let the farm to another tenant at that rent. It was in relation to this that the letters complained of were written. One letter, written by the defender to Mr. M'Connell, a neighbouring farmer, was published subsequently in the *Galloway Gazette*, but Lord Kincairney held that the defender was not responsible for its publication, and disallowed the issue under that head. There remained a letter and certain notes written by the defender and published by him in the *Galloway Gazette* of 22nd May, 1895. In these statements were made that the farm had been indifferently cultivated or managed; that, in consequence, it had been brought into an exhausted condition, which necessitated the application of a considerable amount of lime manure for six years. The pursuer sought to make out that these statements amounted to a charge of dishonesty. Lord Kincairney, however, held that it was impossible to maintain that an assertion that a man was a bad farmer could be innuendoed as meaning that he was a dishonest farmer. On the other hand, in his lordship's opinion, each of the letters, and also the notes, did import that the farmer had worked the farm unskilfully as a farmer, and that the farm suffered in consequence. Was such an allegation actionable? Now, the defender was at the time a candidate for the county, and it was in reply to an express demand made for an explanation of the circumstances that the defender wrote the letter of 14th May, in which he charged the pursuer with indifferent cultivation causing injury to the farm. Now, nothing more injurious to a farmer could be done, for the publication might probably prevent the tenant getting another farm in the neighbourhood, and so to some extent disable him from earning his livelihood in the business to which he had been bred. His lordship would be slow to think that the law afforded no remedy for so great a wrong. It was analogous to cases in which public statements that a professor or schoolmaster was unfit for his office had been held actionable. The law certainly did allow anyone on due occasion to criticise the work of a tradesman; but that was a different matter. The defender's defence was that his letter was a public reply to a public attack or public criticism—namely, the attack made on him when a letter, written by pursuer, was read at a meeting of farmers and electors, and he pled that as a candidate he had to explain the circumstances. Lord Kincairney, however, held that, seeing it was not admitted that the pursuer had anything to do with the publication of the statement at that public meeting, the defence failed. If it was proved that the pursuer was active in submitting the statement to the meeting of farmers, that would be a different matter. But, if that were not proved, he did not think that the pursuer's right should be affected by the unauthorised act of Mr. M'Connell. The issue to be sent to a jury in this case is, whether the letter and notes published by the defender in the *Galloway Gazette*, or any part of them, were of

and concerning the pursuer, and falsely and calumniously represented that the pursuer in the course of his tenancy worked Droughtag farm carelessly and unskilfully, and that the farm was left in an exhausted condition.

## HOUSEHOLD HINTS.

In ordinary burns and scalds the only remedy required, is to thoroughly exclude the air from the injured part. Cotton batting will do this effectually.

Bits of toilet soap which are very small may be utilized. Make a bag of Turkish towelling about 9 in. square, and put in it all the small pieces of soap. When three-quarters filled, sew up the end and use it the same as if it were a cake of soap.

Preparation for Polishing Brass.—Pound fine and then sift half pint of rotten stone. Add to this half a gill of turpentine and enough sweet oil to make a thick paste. Wash the brass first in soap and water; wipe dry, and then rub with the paste. Rub with a soft, clean rag, and finish with a piece of chamois skin.

In cooking green vegetables, such as peas, beans, and asparagus, it will be found that by soaking them for an hour or two in cold water they will regain much of that fresh, delicious flavour which is the principal charm of country vegetables. Also a spoonful of salt in the boiling water in which they are cooked will preserve their green colour.

White sugar is an excellent application for cuts, wounds and bruises, quickly subduing inflammation. Salt pork, raw, is also good and in some cases easier to apply.

Matting should not be washed with soap and water. Lift it from the floor, dust well on both sides, and wipe it carefully with a fairly strong solution of salt water.

An ink splash on the carpet should be first washed out with milk, and cleaned up afterwards with warm and nice soapsuds.

Rusty black lace, which may have been long in the family, can be revived and made as fresh as new by the steam of green tea.

When the eyes are tired, or inflamed from loss of sleep, apply an old linen handkerchief dripping with water as hot as you can possibly bear it.

To throw water on burning kerosene only increases the danger by causing the oil to spread, but salt, flour, or cornmeal will quickly smother the flames.

Always keep the inside of your coffee pot bright to insure good coffee. Boil it out occasionally with soap, water and wood ashes and scour thoroughly.

To relieve pain from bruises, and prevent discoloration and subsequent stiffness, nothing is more efficacious than fomentations of water as hot as it can be borne.

Flour warmed before using it for mixing hastens the lightening process.

## GENERAL ITEMS

Mr. Alexander Macdonald, a friend and fellow-student, has passed at an early age. He began life as a journalist on the *Elgin Courant* and later as assistant Editor of the *North British Agriculturist.* He achieved distinction in the agricultural classes in the Edinburgh University, and was afterwards Editor first of the *Mark Lane Express* and next of the *Farmer and Stock-breeder.* Later, we hear of his going to South Africa in search of health, and even here he was not idle to judge from an exhaustive report on dairying in Australia that reached our hands. The *Scottish Farmer*, referring to his death, says: "When but a little over the threshold of thirty years, Alexander Macdonald's career has come to an end. Energetic and daring to a degree, our late comrade bade fair, had his life been spared, to accomplish something worthy of his name."

Under the head of Practical Vegetable and Flower Gardening, the *N.S.W. Agricultural Gazette* writes as follows:—

The value of a thick mulch of animal droppings, rotten straw, &c., does not seem to be properly understood by many persons who desire to grow vegetables. It is surprising how many are under the impression that cow or horse dung will do injury if spread over the surface of the soil amongst the vegetables. This need not be feared, but, on the contrary, it will be found to be most beneficial. Farmers should have no difficulty in collecting an abundance of dung, both for digging into the soil and for a mulch. That for digging into the soil will be all the better for being decomposed or rotted before it be used. The manure had better be rotted under some kind of shelter, where the rain cannot wash through it and wash out some of the most valuable part of it. It should be kept moist whilst it is rotting, so that it may not become too heated and burn, for in such a case its value is considerably diminished. As much of the liquid excrement of cattle should be saved as possible if the best of manure is desired. The fresher the dung the better the manure will be, for old dung that has been lying about for months exposed to the Veather is but of little value except for its mechanical effects in the soil or as an absorbant for saving liquid excrements. It is useful for a much, however. Liquid manure, which can be made from the dung of animals soaked in water, is of great value for vegetables, but should not be used over strong, especially if it has fermented, in which case it should be considerably diluted with water. Experience will soon show the best strength to use if the effects of various applications be noted carefully. Save all waste matter from the house, and it will be found of much value when the water supply is short. If liquid manure be used it should on no account be poured over the leaves of vegetables, but be applied to their roots only. This can most easily be done by drawing away the soil, or rather by making a little shallow furrow or trench, into which the manure can be poured, and when it has soaked into the ground the soil should be covered over again. There is but little trouble about this work, which can be effected very quickly with a hoe.